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The Medical and Surgical Association of the Southwest Ninth Annual Meeting at Phoenix, Arizona, November 6th, 7th and 8th.

SOUTHWESTERN MEDICINE

VOLUME VIII OCTOBER, 1924 No. 10

Official Organ of the New Mexico Medical Society, Arizona State Medical Association, El Paso County (Texas) Medical Society and the Medical and Surgical Association of the Southwest

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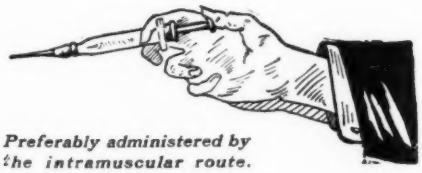

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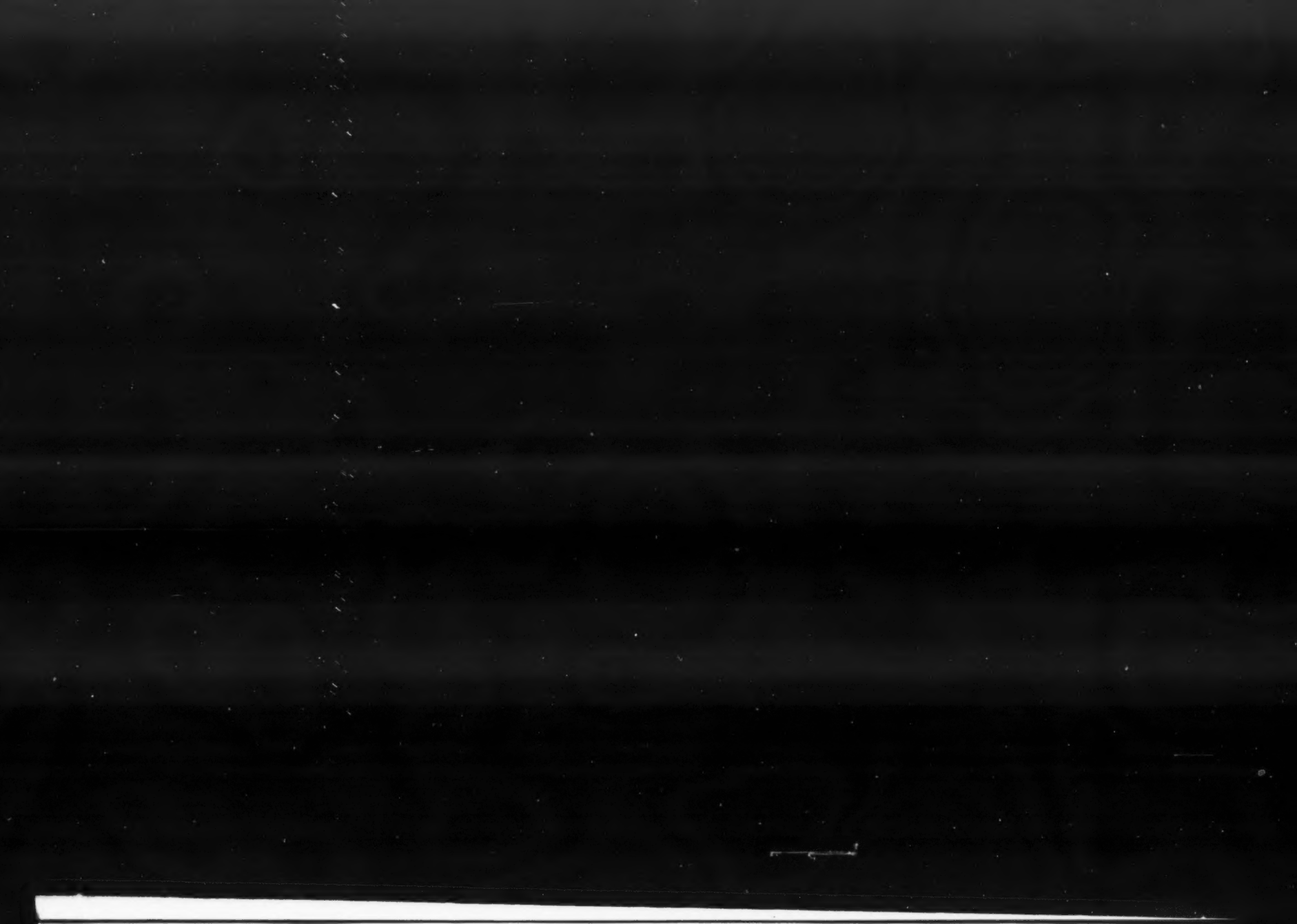

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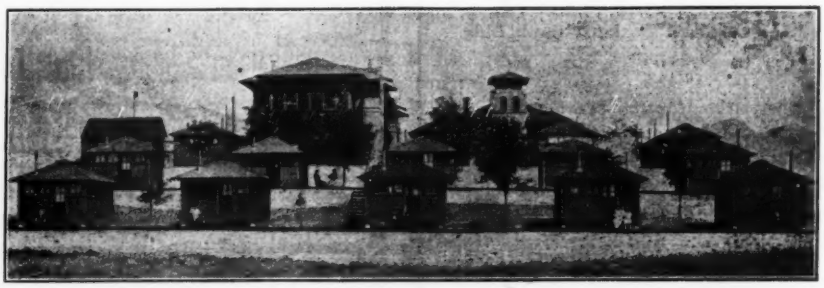

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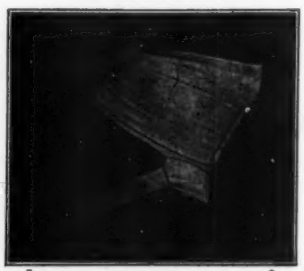

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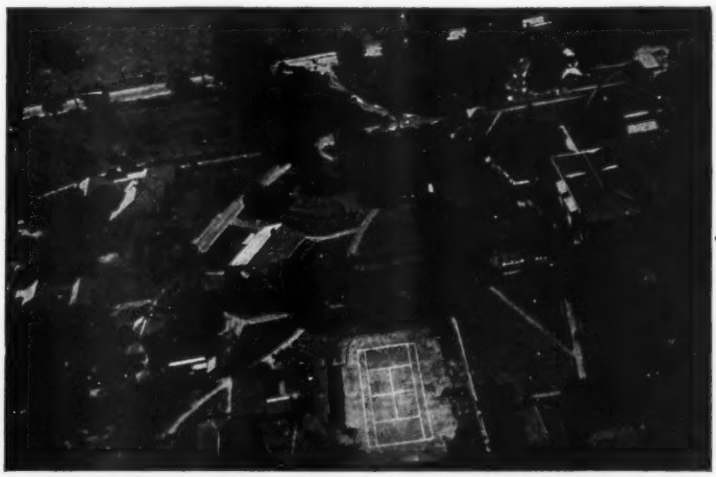

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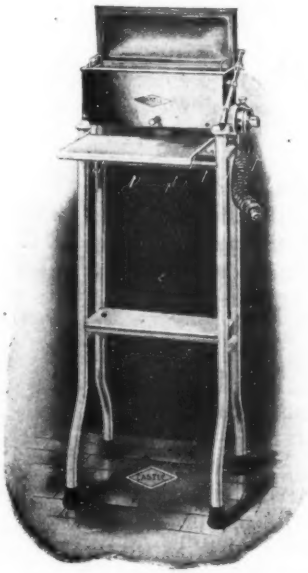

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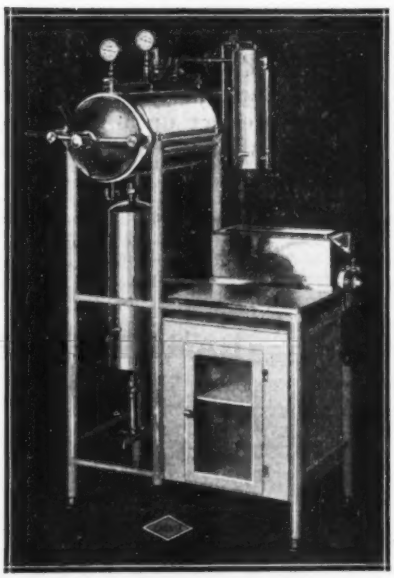

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TRAUMATIC AND INDUSTRIAL HERNIA*

J. P. KASTER, M. D., Chief Surgeon, Santa Fe Railway Company.

The great increase in social legislation in recent years has made the subject of traumatic hernia one of vital importance to every industrial organization. Most states have adopted a workmen's compensation act, and therefore traumatic or industrial hernia, at first largely a question of theoretical interest, has become one of great practical importance.

There has been no definite attempt made to standardize our knowledge of traumatic hernia in regard to its etiology. In recent years the question of compensation has too often rested upon the power of the plaintiff's attorney to stir the emotions of the jury rather than upon carefully weighed judgment, based upon knowledge of the facts, relating to the origin of hernia.

The time has come when these cases are being passed upon by experienced physicians and, therefore, it is important that the facts bearing on the etiology of hernia should be collected, classified and made readily available.

The term "rupture" is very unfortunate in that it indicates an injury and has been a factor in creating the impression that hernias are due to trauma. The definition given of rupture is a "forcible tearing or breaking of a part." That traumatic hernias do occur, there is no question, but when hernia is due to trauma it can only result from the rupture or tearing of the abdominal wall, fascias or muscles. All other hernias are congenital. It will be apparent at once that traumatic hernia is not common.

The New York State Compensation Board states that traumatic hernia is exceedingly rare. The courts of England have decided that traumatic hernia could only occur from direct violence, resulting in definite tearing or rupture of the abdominal wall. All other hernias are classed as congenital defects with preformed sacs.

Prof. Harry E. Mock states that he has personally observed only a few cases of traumatic hernia due to direct violence at the point where the hernia developed. Mr. Mock believes a great majority of hernias develop slowly, due to a gradual dilatation of a preformed sac; that congenital defect is the chief cause of hernia.

MacCready, the greatest English authority on hernia, states that acquired hernia is never due to an accident or a single increase of intra-abdominal pressure.

Graser, one of the highest German authorities, states that hernia, complete in all its parts, can never arise at the moment of accident or by a single increase in the intra-abdominal tension, be it ever so great.

Moschowitz, who made a careful study of hernia in relation to Workmen's Compensation Acts, states that

*(Read before New Mexico State Medical Society, at Santa Fe, N. M., May 27, 1924.)

traumatic hernia is exceedingly rare. It may occur in any part of the abdomen, but usually not at the site of the normal hernial openings.

The following is the rule of the California Industrial Commission: The consensus of medical and surgical opinion points to the fact that hernia is very rarely, in any proper sense, the result of accidental injury—that the accident is, at best, no more than the occasion instead of the cause of the malady, and that the origin of the difficulty is congenital and rather in the nature of disease than an injury.

The Nevada Commission rules that hernia or so called rupture is a disease ordinarily developing gradually, very rarely the result of an accident, and that real traumatic hernia is an injury to the abdominal wall of sufficient severity to puncture or tear asunder the wall and permit the protrusion of the abdominal viscera or some part thereof. All other hernias, wherever occurring or discovered, and whatsoever the cause, except as above, are considered to be diseases.

Many writers state that recent hernias are tender and painful on manipulation, and ecchymosis is not infrequently present. We believe it has no basis in fact. We cannot recall such conditions. We have had men come to the office, claiming traumatic hernia on the right side, having discovered a lump in the groin, which came on a few hours or days before, from only a lift or supposed injury. No complaint on the left side. On examination it was found that the man had a hernia on the right side, and after the right side was examined, the left side was also examined and the fact revealed that he had an equally large, if not larger, hernia on the left side.

Hernia is practically always due to the presence of a preformed sac or open pouch of peritoneum, which pouch has failed to close in the normal way, or to the presence of structural weakness in the neighborhood of the hernial orifices, due to poorly developed muscle or fascia.

I desire to call your attention to the fact that the testicle, in fetal life, develops in the lumbar region behind the peritoneum, to which it is attached, and at the end of the fifth month it begins its descent to the scrotum, carrying with it a fold of the peritoneum. This fold of the peritoneum is carried down into the scrotum with the testicle, forming the processus vaginalis. The fact that the walls of the peritoneal pouch are in apposition is supposed to produce irritation enough to cause adhesions and obliteration of this process. Unfortunately, however, the obliteration of this sac does not always occur and it may be entirely open, as proven by the fact that many children are born with a complete hernia. Any portion of this process may be obliterated, and if we have an obliteration of the sac below and above, with an open portion between, there is developed a hydrocele of the cord. Of course, if the sac is open below, a hydrocele develops.

I am sure that you gentlemen have all seen complete inguinal hernias at birth. They are usually easily reduced. I have seen but one strangulated or irreducible hernia in a child. In this case the patient was nine days old and developed a strangulation. An operation was done and the protruding gut was dark, but on relief of pressure the color returned and the child made an uneventful recovery.

A hernia means an open sac or an open way and does not necessarily imply that any portion of the contents of the abdomen shall be in the sac. It may or may not be. If the sac and opening exist, we have a hernia. Hernia is a very prevalent condition, and unless one has had considerable experience, he has no idea of the percentage of men who are suffering from hernia.

It is generally believed at this time by operating surgeons that where a hernia requires operation it is always well to examine the opposite side, and if on careful examination we find the rings patulous or open and an im-

pulse felt on coughing, that it is always wise to operate both sides. This has been our rule for many years and we have always found that where a hernia is fully developed on one side and where, on examination, we find the opposite side giving us an impulse at the inner ring, on coughing, that we find a hernial sac extending frequently well down towards the scrotum, although this sac may never have been filled by any portion of the contents of the abdomen. It is this class of cases in which we frequently, after operating on one side for hernia, have a hernia develop rapidly in the other, and we believe that it is always better to operate both sides under such conditions.

The definition given of a hernia is the protrusion of a loop or knuckle of an organ or tissue through an abdominal opening. The peritoneum protruding through the abdominal wall is a hernia. A man may have a congenital hernia, in which the contents of the abdomen have never been down into the sac, as this requires a considerable time. The open end of the sac may be so closely fitting and held so firmly by the elasticity of the tissues surrounding the hernial opening that the contents of the abdomen do not pass out, but each time that the intra-abdominal pressure is increased by coughing, lifting, a fall, or straining at stool, the contents of the abdomen will be forced more and more into the hernial opening.

As we grow older, the elasticity of tissue is reduced and it is easier for the contents of the abdomen to find their way into the preformed sac, and each time that the intra-abdominal pressure is increased from whatever cause, the contents of the abdomen are forced more and more into the hernial sac until, by stepping down suddenly, or a fall, or an extra hard cough, lifting or straining at stool, the contents of the abdomen are forced farther into the hernial sac and is discovered by the patient as a mass in the inguinal region. If it be omentum that is forced into the sac, little or no pain is experienced, but if a portion of the intestine is forced into the sac for the first time, the pressure is frequently sufficient to cause pain lasting a short time and not very severe.

Given a history of a man who, while assisting in the lifting of a heavy weight, has an extra strain thrown on him, or a man who falls a distance, it may be but a few feet, and feels a pain in the inguinal region. He simply puts his hand naturally over the painful area, nothing is discovered, and he goes on with his work. It may be a few hours, a few days or a few weeks, before he suddenly discovers a lump in the inguinal region. He applies to the doctor, who makes a diagnosis of hernia or rupture, the patient is informed of the conditions and recalls the fact of his lift, his fall, or whatever strain he may have undergone, and immediately attributes his hernia to the accident. This is not a traumatic hernia. This is simply the first filling of the hernial sac which is congenital and has not been opened by a strain, fall or lift, but has been gradually developing for a long time. Why do we say these cases are not due to trauma? First, because the injury is not sufficient to produce a hernia or rupture. Second, on operation, we always find a perfectly formed sac, and this sac is always in a certain position with regard to the cord. The sac is always adherent to the tissues surrounding it, so much so that it is necessary to dissect it loose, which would not be the condition if recently forced down. It would naturally be but slightly, if at all, attached to the surrounding tissue. The hernial sac is found on the anterior surface and upper portion of the cord and is covered and surrounded by a continuation of the connective tissue which is outside the general peritoneal cavity.

In operating for hernia the surgeon has learned that, if there is a hernial sac, the position is always the same; that is, anterior and into upper portion of the cord, and when the sac is lifted from its position we always find the vas deferens attached and

adhering to the posterior surface of the sac. The vas deferens is not loosely attached, but firmly attached to the posterior wall of the sac and must be dissected loose. These adhesions were not formed rapidly and would not always be found in the same relative position, if the sac had been recently forced down.

I am sure that the operating surgeon knows this, that he always finds the sac as described, which is the position of the pouch of peritoneum which has been carried down into the scrotum by the descent of the testicle. If the hernias were due to violence, I cannot conceive of the hernia forcing itself down into the cord, and always with the vas deferens attached to its posterior surface.

It is natural to suppose that if they were due to trauma or injury that the sac or hernial pouch would be forced, not into the cord, where it is found, but into the connective tissue in front, behind or on either side of the cord. This condition does not occur.

The sac is always found in the cord, covered by the same connective tissue that covers the entire cord. In operating, we always have to tear through the connective tissue which surrounds the cord in order to find the hernial sac. I am sure when I call your attention to the development of the testicle, its descent into the scrotum, carrying with it, as it does, a fold of the peritoneum, that you will see at once that the hernial sac, as ordinarily seen, is congenital and not due to trauma.

We have all of us seen serious injuries of the abdomen resulting in rupture of the intestines, liver, spleen or kidney, without the formation of a hernia. Cases are frequently observed where we have a serious injury to the contents of the abdomen, without the production of a hernia. The fact is liable to be overlooked that hernia cannot be developed by a single increased intra-abdominal pressure, but is always the result of long continued intermittent pressure upon the upper end of a preformed hernial sac.

That hernia may be due to trauma I have no doubt, but it is a rare accident and cannot occur without a rupture of the fascia or muscular layer of the abdominal wall, and it has been noted that when traumatic hernia does occur it is seldom, if ever, through the natural hernial openings.

Again, if hernia results from trauma, we must have the physical evidence of the injury and the injury will be sufficient to incapacitate the patient at once and the shock of the accident will be sufficient to cause the patient to seek medical advice at once.

I am calling your attention to these conditions and facts that you may give them serious consideration and not be willing to follow blindly the teachings of the older writers.

It is a fact that we have learned very much, in fact, have gained our knowledge of hernia and its production, only since we have been operating for its relief, which is not so many years.

DISCUSSION

DR. F. H. CRAIL, Las Vegas, N. M. (opening discussion): I think we have all been not only interested, but informed by the excellent exposition of the subject of the etiology of traumatic hernia, as given us by Dr. Kaster. Not only the sound pathological basis of his argument, but the weight of his long experience in a position that has given him unusual opportunities to observe the condition of which he speaks, will carry conviction to most of us.

And, as Dr. Kaster says, this question is no longer confined in its importance and interest to industrial surgeons per se, but all practicing physicians, because of working men's compensation laws and health and accident insurance, come in contact with it and should understand whether a traumatic hernia has a pathological basis in fact or not, in order to know what stand should be taken in the matter.

I think that perhaps we have all felt sometimes that an unusual strain or fall or heavy lift has brought on a hernia as illustrated by the following case: A young man thirty years old, a lawyer by occupation, served as a second lieutenant during the World War. He passed the several examinations for admission to the army during service and when discharged, and no hernia was ever detected and his discharge papers pronounced him physically fit. Two years after his return home he went to Silver City to an American Legion Convention and on the way home the automo-

bile in which he was riding got stuck in the sand and he did a great deal of pushing and lifting to get the car out. Immediately after this he noticed a discomfort in the right groin and upon examination a small incomplete indirect hernia, about the size of a pigeon's egg, was found. There was no evidence of trauma about this hernia, there was no tenderness in the region of it and the young man was operated upon within a few days of his return home. Now the clinical evidence in this case, the history and all, would seem to make out a pretty good case for a traumatic hernia, as the term would be used in claims against employers and insurance companies. But at operation the pathological condition was exactly as Dr. Kaster described it; the sac was intimately connected with the surrounding structures, it occupied its usual position to the cord and its attachment to the cord was firm. This picture was not at all one of something that had recently happened, but rather one of something that had been there a long time, and as we know that some of these sacs that extend into the scrotum and are continuous with the tunica vaginalis are congenital and have been universally so considered. So it is very reasonable to suppose that these others, too, such as the one in the hernia that I have described, are also congenital or have formed so slowly that the hernia may be looked upon as a disease rather than an injury.

Hamilton Russell of Melbourne found a direct hernia sac in a cadaver where the man had no hernia during life and a number of similar pouches have been found in the femoral region with no history of hernia during life. It is certainly also true, as Dr. Kaster has pointed out, that hernias exist without patients knowing anything about their presence. I have had this strikingly illustrated twice in cases of strangulated hernias, once in a woman who had symptoms of intestinal obstruction for five days with fecal vomiting and neither she nor her attending physician had discovered that she had a lump in her groin and she absolutely denied that she had ever had a hernia. The other was a strangulated femoral hernia in a middle aged man who laughed at my notion that a little lump that I found over the saphenous opening could be the cause of such a belly-ache as he had been having. He said that he had never noticed anything there.

All the evidence seems to favor Dr. Kaster's contention that practically all hernias are probably congenital or at least very slow in their development and that trauma plays no part in their causation.

DR. L. A. HUBBARD (Raton, N. M.): I do not arise for the purpose of discussing the doctor's paper, but to ask a question. Are these hernias which do not bother some persons, but which are really present from birth, to be considered as injuries, and should a man be compensated for them under a compensation law?

If you are engaged in industrial surgery, you see a lot of this. Oftentimes we have men who come to us with hernias they got the day before or several days before, after extra exertion. We examine the records back for several years (nearly all of these men have had repeated physical examinations), and we find the man had an established record of hernia three years before. In such a case the man gets no compensation for hernia, because it is an established fact that he had one previously. Nearly all the rest of them do receive compensation, however, because we cannot show that hernia previously existed. So I should like to ask how, in addition to telling these people that a traumatic hernia does not often occur, we can establish this fact? It means a lot of money to the patients—and also to the various companies. If there is any information Dr. Kaster can give me on these lines, it will be appreciated.

DR. KASTER: I am going to ask Dr. F. P. Miller if he won't tell you of the case he was speaking to me about today, which he thought was a traumatic hernia?

DR. F. P. MILLER (El Paso, Texas): I really wanted to talk about Dr. Kaster's paper, which I enjoyed and appreciated very much, but have been on the floor before this afternoon and do not want to impose.

I am sure Dr. Kaster's conception is entirely right from an embryological standpoint, especially when speaking of femoral and inguinal hernias.

In Texas, the Compensation Law settles the question. You must prove that the hernia did not exist to any extent whatsoever prior to the accident, and that when the accident occurred, the patient felt immediate severe pain and that he was totally incapacitated from that itme.

The majority of cases we find at operation are just as Dr. Kaster describes. A great number of persons come to us for operation who are working for themselves—farmers, for instance—where there is no compensation due from a corporation, and there is no question involved as to whether it is a traumatic hernia, except the patient states that while engaged in his usual occupation he suddenly felt a pain in his inguinal region and that a lump appeared and that he never had any evidence of a rupture prior to this accident. But in other cases of laboring men, working under the law, the question of traumatic origin must be decided.

The case I spoke to Dr. Kaster about was that of a young man, 23 years old, an Italian, who formerly served with the Fort Bliss troops as a special motor cop. He resigned and accepted a position with the Baptist Sanatorium. The other day in coming to town at a very fast rate on his motorcycle, he collided with a truck. I first saw him in the tonneau of an automobile. He was unconscious, but was writhing, groaning and apparently in great pain. There was present a large swelling beneath the skin of the abdomen, just to the left of the middle line, about 2½ inches

below the umbilicus. The swelling consisted of intestines and was easily reduced by pressure of the hand, but would recur immediately the patient began straining. Diagnosis of traumatic hernia was made and laparotomy was performed at once. We found that all the tissues of the abdominal wall with the exception of the skin had been lacerated. The wound passed through the peritoneum and the posterior fascia of the left rectus muscle, had torn its way through the rectus muscle and the anterior layer of the fascia and all the superficial tissues. A great deal of blood, blood clots and intestinal contents were found in the wound. There was a complete rupture of the ileum, destroying about four and one-half inches of the wall of the small intestine. It was impossible to suture this portion of the intestine and we resected it and did an end to end anastomosis. There were several longitudinal ruptures of the peritoneum and muscle layers of the sigmoid, but the mucous membrane seemed to be intact. There were present lacerations of the parietal peritoneal wall adjacent to the left iliac fossa, with ecchymosis in a number of places. However, at the internal abdominal rings, there was no evidence that these parts had borne any particular injury. There was only a slight external wound on the skin and this was found about two inches above the pubis and to the right of the middle line. The patient had a number of other wounds about his body and face.

I believe that this should be classed as a true traumatic hernia. Of course, there was no peritoneal pouch covering the intestine. The patient made a good recovery and has a sound abdominal wall.

I have seen two cases of hernia of the diaphragm. Dr. Kaster did not speak of this type of traumatic rupture in his paper. One case was that of a Mexican who had received a gunshot wound in the Mexican Revolution. The bullet had passed in an anterior posterior direction and had evidently severed the pleural surface of the diaphragm for about two and one-half inches, but did not penetrate deep enough to sever all the tissues. Near the posterior attachment of the diaphragm, the bullet had passed through all the structures of the diaphragm and then emerged again on the pleural surface. The bullet was shattered against the tenth rib and part of the bullet had been removed. However, it showed plainly on x-ray examination. Pieces of the omentum had plugged the two openings in the diaphragm. Later, while working as a railroad section hand and lifting on a steel rail, he felt intense pain in his abdomen, followed by profound shock. For about a year following he was unable to do any work and suffered vague abdominal pains with nausea and vomiting. He also complained of shortness of breath and general weakness. He was sent to my clinic for appendicitis. We found no tenderness over his appendix and his history was not typical. Examination of his chest was unsatisfactory. The x-ray showed us plainly that he had a hernia of the diaphragm. The abdominal contents, with the exception of the attached portion of the cecum and appendix and sigmoid, and that portion of the intestine remaining of sufficient length to reach the opening in the diaphragm, were all in the left pleural cavity. We obtained a number of good x-ray pictures. At the time of operation it was extremely difficult to bring the intestines from the pleural into the abdominal cavity owing to the fact that the pleural cavity represented a vacuum and that portion of the intestine which was drawn down, as soon as released would be propelled back into the pleural cavity. We overcame this difficulty by inserting a small catheter into the pleural cavity, allowing air to enter. There was no special difficulty in repairing the wound in the diaphragm. It is interesting to record here that we had a complete expansion of this collapsed lung at the time the operation was completed. This was demonstrated by x-ray before the patient was put to bed.

Another case was that of a man caught in a cave-in while working in a mine in Colorado. Several bones in his chest, arms and pelvis were broken. He stated that his head was forced between his knees and evidently a rupture of the diaphragm occurred at this time. We made a number of x-ray pictures of this case, but the patient refused operation. The Industrial Commission of Colorado requested the x-rays and promised to return them after they had passed on the case, but we have never been able to get them returned.

DR. KASTER (closing discussion): Dr. Crail spoke of the soldier who returned from the army and had passed repeated examinations and had no hernia and never had a hernia until a certain time when he attempted to lift an automobile out of a ditch, the hernia appeared. I do not question the doctor's statement, that the man had passed repeated examinations and no hernia was discovered. I doubt whether there is a man in the house today who can say absolutely whether a patient has hernia or not, from any physical examination, unless the contents of the abdomen come down into the hernial sac. The sac itself is so delicate, that covered as it is by the skin and superficial fascia, as well as the covering of the cord, no man can prove or disprove the presence of the hernia, unless the contents of the abdomen can be forced into the sac.

I knew a young man who was anxious to go into the army. He came to me on account of the fact that he had a hernia and wanted to know how he could get by. I told him I did not know. He said, "I am going to try." I told him that if he were going to try to get by the board, he had better throw away his truss and not make an attempt until all evidence of having worn a truss had disappeared. He passed the examination, and since getting out of the army has been drawing compensation for hernia occurring while in the army.

We examine a patient, and if we find that he has a large external ring, you ask the man to cough, and you get an impulse against the finger. The man certainly has a hernia, at least a potential hernia. He has a sac there, and it is only a question of time until that man is going to have the contents of the abdomen pass down into the hernial sac.

I had a personal experience; when 48 years old, one day I suddenly felt a pain in the groin. I felt of the groin and could not feel anything, but the manipulation relieved the pain. I coughed and could get no impulse. I felt that I was developing a hernia. I was examined by some friends, who said htat I did not have a hernia, and a few months later, suffering from a cold, during a coughing spell, felt a pain in the groin and a tumor appeared. I put on a truss. Later, I visited my mother and, in speaking of a hernia, she told me that I had a hernia when I was born and had worn a truss for two and a half years. I had gone 48 years without the contents of the abdomen coming down into the hernial sac. I had an operation and it was proven beyond doubt that I had a congenital hernia.

I have seen but two hernias due to trauma: One the result of a man being struck in the abdomen by a piece of board thrown by a saw, rupturing the deep fascia, as well as the muscles. The other a switchman, who was caught between the cars. The only reason the man was not killed was because the cars did not come quite close enough together. The abdomen was compressed and a hernia resulted. When the slack went out between the cars, the man dropped to the ground, was carried to the hospital, and when he arrived at the hospital the scrotum was filled with blood, as well as with the abdominal contents. His life was despaired of, but he finally recovered.

When you have a traumatic hernia, you do not have to ask your patient when it occurred, because he will be immediately put out of commission.

Traumatic hernia occurs usually far away from the natural hernial openings and there is always physical evidence of the injury. Any injury sufficient to produce traumatic hernia is a serious injury.

DELAYED UNION OF FRACTURES*

E. J. GUNGLE, M. D., Tucson, Ariz.

This subject suggested itself for the main reason that in dealing with fractures of either the simple or compound class there exists the possibility of a given case eventuating in this unpleasant condition, and from an interesting case coming under my observation in which bony union came after a period of approximately two years, even after a reversible inlay graft was done at a relatively early stage. I hope that a general discussion will follow in order that any new suggestions may be heard and thus add to our information.

Delayed union is due to a retardation in the repair process which ordinarily results in complete bony union at fracture site, the osteogenetic forces stopping or being greatly delayed. It is impossible to say just when a delayed process becomes a non-union, for a prolonged one might eventually unite; but for economic and other reasons it is a matter of no small concern both to patient and physician to use every means to secure firm union at the earliest time possible.

The histogenetic elements entering into the repair process may now be considered, for the failure or pathology thereof would seem to be the greatest cause. In simple fractures hemorrhage occurs between the ends as well as into the surrounding tissues; this acts as a stimulant which incites irritation of the living cells, which, in turn, multiply, the capillary mass extending their granulation buds from either side; this is the granulation stage. The Haversian system is next built into this mass, resulting in the fibrous stage. Each particular tissue produces like cells; the arteries next develop their arteriole collateral branches; the nerves next; the bone, soft callus at first, with its latent osteogenetic forces, first in the subperiosteal layer, then those in the walls of the Haversian vessels, in the compact bony tissue and the vessels with the osteoblasts in the medulla. All these histologic tissues coalesce across line of fracture, the ossification of the walls of the blood vessels forming the lamellae of the Haver-

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sian system. This is first formed around the periosteum; second in the medulla, and lastly in the compact bony tissue eventuating in the third or cartilaginous state which ordinarily goes on to bony union; the next step is absorption of excess callus, both the peripheral and medullary.

Causes are generally given as local and constitutional; the local seemingly having the greater number of believers. Among these we include malapposition of ends; interposition of soft parts; misapplied retention splints; diminished blood supply, as when nutrient vessels are involved or some local bon edisease is present; faulty endocrinology; syphilis or other constitutional conditions.

In non-infected compound cases, Murphy has shown that the external bleeding removes the clot between the ends of the bone which ordinarily acts as a support for the budding capillaries; this has to be re-established, thereby extending the time for repair. With infection added, the bacteria break down this tissue again and again and nature throws off this supporting scaffolding, greatly delaying the bony union. Occasionally the deeper layers of connective tissue survive, which, on contracting, may draw some of the surrounding tissues between the ends, auguring for delay. In some cases no bony cells or calcareous deposits occur at all and for which reason no one has shown definitely.

Statistics show chief location sites for this pathology to be,—first, upper one-fourth with lower three-fourths of the humerus; second, three and a half to four and a half inches above the internal malleolus of tibia; and, third, the neck of the femur.

TREATMENT

Knowing the role infection plays in compound fractures, we should be scrupulously careful in the first handling of same, particularly of invading the region unnecessarily, and be as aseptic as possible; in impacted fractures at the neck of the femur, great care must obtain lest this impaction be broken apart, which might preclude a useful limb. Since the lower tibial region is so frequently involved, and as local stimulation appears to react favorably, early ambulation with suitable splints should obtain. Local masage and efforts for securing local hyperemia are of great service. The non-operative treatment is the accepted way of handling the general cases; but for those impossible to get into sufficiently good apposition or failure to retain there, the open method with some variety of retentive Lane plate or autogenous graft would be indicated. In the operative management for delayed union the antogenous graft is best. Lane maintained that his plate was not for the delayed or non-union type, and many authorities have verified this statement. Murphy frequently resorted to the autogenous intramedullary type with wonderful results. Henderson seems to favor the reversible inlay method, wherever same can be conveniently done. Tibial autogenous grafts are greatly used now. In Bier's clinic, the injection of venous blood between ends has had a favorable outcome generally. In luetic cases, specific treatment is indicated. Lime water has been used with some measure of favorable results. Thyroid extract has also been recommended.

Coughlin has remarked that in fractures of lower extremity, it is not necessary that firm bony union exist before patient can use the limb, and that the early, careful use of same would bring better results. He had a case of transverse tibial fracture, without any separation remain ununited for fifteen months and then unite, without operation. He estimates that about 90 percent will unite by ordinary care.

CONCLUSIONS

Cases of simple fractures, nicely reduced, may be unduly prolonged in reaching final complete bony healing. Statistics show that the upper humerus, lower tibia, and neck of the femur are the chief offenders; that early, passive motion should be used and early ambulation begun where

splinting will permit, to stimulate osteogenesis, and that, even after operative procedures, the time for union may be unduly prolonged.

CASE REPORT

R. L. H., age 42, came to me September 3, 1921, with compound fracture of tibia and fibula, lower third, which he received a short time before by getting his leg caught between base and fly wheel of gas engine while starting same. Fracture reduced, wound dressed and plaster cast applied and splint with window made for dressing wound; ran slight temperature for few days, but no infection followed. A new cast applied after a week and skigraph showed good apposition and alignment; patient kept in bed for six weeks, eventuating in firm fibular and only partial tibial union. Was then allowed on crutches with splints so applied to permit of easy massage. At end of four months, tibial union slightly firmer than before; radiograph showed callus of tibia. The cast was so arranged that heel might be struck against floor to help stimulate osteogenesis. Ten months after injury patient had a reversible inlay autogenous graft done which did not seem to help any, for a sinus developed and union occurred after a period of over two years.

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DISCUSSION

DR. R. D. KENNEDY (Globe, Ariz.): I haven't much to add to Dr. Gungle's paper. Louis Championniere, even before the time I started to study medicine, had been teaching the treatment of fractures by extension and mobilization, and his results in delayed union were probably superior at that time to the results obtained by any other method.

When I studied medicine I was taught that the reduction and immobilization of fractures with a maintenance of this immobilization was the proper treatment. The mobilization treatment of fractures is undoubtedly painful, and it is hard to get your patients to stand for it, but in delayed union your mobilization is the proper treatment as is illustrated by the following case:

A man, aged thirty-nine years, on May 29, 1921, had a compound and greatly communicated fracture of the right tibia. The damage to the soft parts and blood vessels were such that, at that time, the doctor who was taking care of him was fearful that he might lose his leg. It became cold and black. He put it in a pillow, elevated the limb, and maintained heat, and after babying it along for some time, the circulation was re-established and the leg put in a plaster cast.

On November 3, 1921, there was no attempt at union and a sliding bone graft was done. The limb was put in a plaster cast and completely immobilized. The x-ray showed the gradual disappearance of the bone graft. There was no infection.

On July 3, 1922, a second bone graft was done. The second graft was larger than the first, as large as the tibia would permit, and again the limb was treated in the same way. A series of x-ray pictures showed the gradual absorption of the second bone graft without any union.

On January 17, 1923, a Delbert walking splint was put on this patient. This splint is ably described in a number of the Surgery, Gynecology and Obstetrics by Dr. Abbott of the University of Michigan. This man was a Mason. With this Delbert walking splint on, he went to work with his ununited fracture and within four months marked evidence of union was shown and today he has a perfectly united fracture.

A series of x-ray pictures show the marked comminution and injury to soft parts and the gradual disappearance of the two grafts and then finally the application of the Delbert walking splint with the evidence of union taking place, until finally a picture taken a few days ago shows a complete strong union.

So, I believe that in many of these cases we are making a mistake in too completely immobilizing our fractures; that if we allow the ends to pound against one another we stimulate bone formation and will get better results.

DR. R. J. STROUD (Tempe, Ariz.): The question of immobilization in compound fractures would be simple if infection did not take place. When infection takes place in a compound fracture you have to immobilize and keep the fracture immobile until all of the infection has cleared up. Of course, slight compounded fractures, those you get early and in which you can debride or clean out and open to obviate the development of infection, may be treated as simple fractures in a few days; that is, after the danger of infection is past. In those massive compound fractures where you have a big loss of tissue and a big lot of dirt and grease and various things that happen to get into wounds, you are certain to get infection in spite of everything done. Then a splint will have to be put on to secure absolute immobilization and provision made for drainage, cleansing the wound, and the addition of antiseptics. The British surgeons found, during the war, that only immobilization could accomplish union when infection had taken place, even after many months of trouble. Dr. Kennedy worked with Dr. Morrison while in the service and also with Dr. Jones, and these British surgeons immobilize infected fractures. In fact, when there was a lot of comminution in massive fractures, the loose bone could all be cleaned out, the ends jammed together, and if there should be infection resulting, they could absolutely immobilize them to get results. They took no account of shortening. If you keep it up and keep it up (this immobilization) you get union. If you let up

on immobilization for even one day in an infected case you will destroy your results.

I don't think either of the doctors preceding me mentioned this phase of the thing, but you are not going to get union—I don't care who it is—in any fracture that is infected, if that infection is around the bone, if you move that bone at all.

I called Dr. Kennedy's attention some few years ago to a case. I had a man who had run his forearm through a big cog wheel. He begged me not to take the arm off, and it looked pretty hopeless. The distal end was about torn off and full of grease. Both bones of the forearm were badly dislocated. He was a blacksmith and this was his right arm. I cut out a lot of bone and jammed the ends together. I put the arm up in a position so that if union resulted the expected stiffening of the elbow would allow him some use of the arm. Enormous infection resulted, but thorough immobilization gave a union. Had I thought of less stiffness of the elbow and moved this arm, the resulting non-union would not have helped him. He kept insisting his elbow was going to be mobile. He was immobilized six months, had a union of the bones, and somehow or other had practically a perfect elbow result. He is blacksmithing today. I want again to emphasize the fact that no matter what you do with a noninfected fracture, you are not going to get a union in an infected fracture unless you immobilize until the infection is entirely cleaned up.

DR. R. D. KENNEDY (Globe, Arizona): If I might say just a word more; many of these delayed union cases are treated by Sir Robert Jones by what he calls "the damming and tapping method." It is practically what is known as the "Biers treatment." With gentle pounding of the fracture region with a light mallet, it produces congestion and stimulates the blood supply to the parts and that is what causes the healing. In infected wounds, your infection has produced the congestion and it is not necessary to mobilize these in order to get a healing. As the doctor said, certainly it would be bad treatment to mobilize an infected wound, and in speaking of that I do not wish to include compound infected fractures that have delayed union.

DR. J. M. GREER (Mesa, Ariz.): There is a very interesting specimen at the Army Medical Museum that illustrates Nature's method in healing wounds and fractures. It is a femur of a deer that apparently had been shot, no doubt sustaining a compound fracture; it may have been infected—we do not know about that—but the thigh bone was fractured in two places and the specimen there shows a complete union at right angles in two different places, with the formation of a medullary cavity through both lines of fracture. Apparently that deer went on running and went about its business, and the fracture, being fractured in two different places, took this right angle turn, and firm union was established.

Relative to splinting bone grafts; I remember another interesting case while I was in the service, in which a bone graft was inlaid in the left humerus. Instead of putting in a cast at that time, they put little splints around the arm and the patient took off the splints, I think, the next day or two. Later this was checked up and it was found that the patient had splints on about two days, and from then on the arm was carried in a sling. The patient had a very nice union.

DR. GUNGLE (closing): Regarding Dr. Stroud's comment on compound infected fractures that perfect immobilization must obtain to get union; this is along the generally accepted lines of treating any sort of infection, that absolute rest shall exist in hastening repair processes, and is certainly a very strong point to emphasize.

CASE OF STREPTOCOCCUS SEPTICEMIA TREATED BY MERCUROCHROME*

J. B. VAN HORN, M. D., Tucson, Arizona.

Patient R. H. S., age 17.

Past History: Negative except for pneumonia at ten and typhoid fever at sixteen.

Present Illness: Received incised wound on inner side of right thigh through skin in jumping a barbed wire fence on March 16, 1924. That evening it was treated with iodine, but not dressed. States that he felt "funny" all day Saturday, March 22nd, with some headache by evening. On March 23rd awakened at 4 a. m. feeling quite ill, called a physician at 7 a. m. and was ordered sent to the Infirmary. Wound appeared dry and innocent. Was very uncomfortable all day, with temperature increasing until at 7 p. m. it was 105.2. At this time Dr. Huffman was called in to see patient and special nurse was put on. Condition was diagnosed as some type of infection of a severe type. Wound was slightly reddened at the edges, crust was removed, showing very slight purulent material at bottom. Inguinal and axillary glands on the right side were

(*Read at the Annual Meeting of the Arizona State Medical Association, at Phoenix, April 24-26, 1924.)

tender and slightly swollen.

March 24th: Remained very ill; blood culture taken (which showed moderate growth of streptococci at end of 24 hours). Axillary glands were more painful, extending to those down the border of biceps; inguinal about the same as on previous day. At 5 p. m. was given 30 cc. of one percent aqueous solution of mercurochrome, intravenously. There was a pronounced reaction, manifested by severe chill lasting two and a half hours, with rapid rise in temperature to 106.6; with this came a desire to defecate .and one or two well formed stools thinning to watery and turning red from the mercurochrome by the following morning; urine was red in a few hours after the injection. Shortly before midnight chill ceased, there was profuse sweating, condition improved, there was rapid fall in temperature (see chart), patient felt very comfortable and slept some. He stated the pain was gone from both groups of glands and, except for diarrhea, he was perfectly comfortable. Second blood culture was ordered (this showed no bacterial growth in 24 hours).

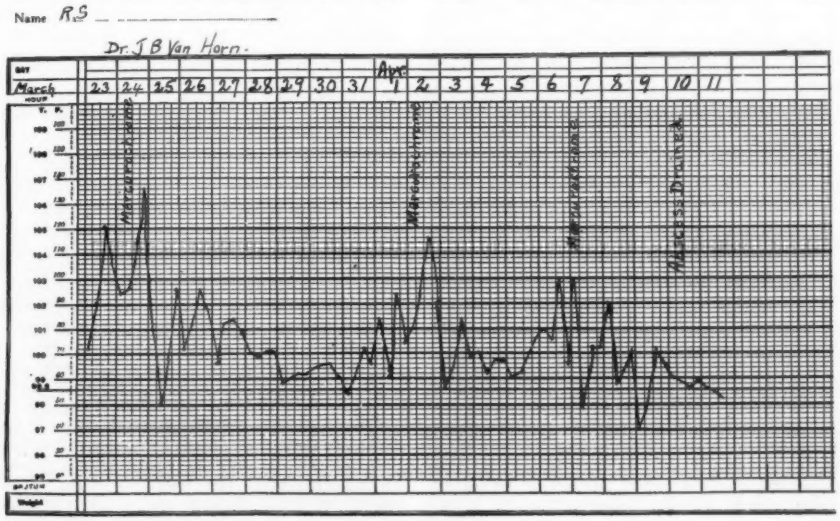
March 25th: Temperature normal; diarrhea, which showed considerable blood, controlled by opiate (Tr. Op. camph., half drachm; morphine by hypo. quarter grain). Feels greatly improved and quite comfortable.

March 26th: Soreness in axillary glands, with swelling and redness, some increase in temperature, but feeling well and has good appetite. Temperature a little stepladder in type, with increasing soreness of axillary glands and complaining each day of not feeling as well as on previous day. Temperature reached 102.6 on April 1st.

April 2nd: Was given 30 cc. one-third of one percent mercurochrome, which was followed by a reaction of lesser severity than before; slight chill, with temperature rise to 104.6, followed by a drop to normal. All soreness in glands disappeared, rested well and felt well again. No diarrhea followed this nor the succeeding injection of mercurochrome.

On April 6th temperature was 103, and on April 7th was given injection of 30 cc. of one-third of one percent mercurochrome, which was not followed by the reaction symptoms as before.

On April 8th, axillary glands were increased in size with some induration and appearance of localizing abscess. On April 9th patient was feeling fine, the glands still showing evi-



dence of tendency to suppurate. On April 10th an incision was made in axillary glands on the pectoral side, evacuating 40 cc. of greenish, moderately thick pus. Glands rapidly decreased in size and wound closed in a few days.

On April 22nd returned to classes, with temperature and pulse normal. Has regained eight pounds of lost weight; appetite and digestion are excellent. Except for some enlargement of axillary glands, physical findings are all negative and patient is apparently well.

DISCUSSION

DR. EDW. R. COX (Clifton, Ariz.): I would like to mention the case we recently had in Clifton Hospital. A woman entered with a large swelling on the right side of her face and neck. She appeared very ill. The temperature was 104, pulse 120. The swelling was hard and indurated. She had several carious teeth. An incision was made without obtaining pus. The day after entry the temperature ranged from 101 to 106. The patient looked bad. The swelling was still hard. We decided to use mercurochrome as a last resort. The first dose was 10 cc. of a one per cent solution. The day following this injection fluctuation was present in the swelling and the patient was brighter. The temperature ranged from 99 to 103. Ten cc. was also given on the second and third mornings after the first injection. After the second injection fluctuation in the swelling was marked and it was incised and drained. After the second injection the patient had a chill and rigor lasting about 30 minutes. Otherwise there was no reaction to the drug. The temperature dropped to normal after incision and evacuation of pus, and remained so thereafter.

DR. Z. CAUSEY (Douglas, Ariz.): I merely arise to report a patient whom I treated with mercurochrome.

A nurse at the Cochise County Hospital, age about twenty-five years, in perfect health. She developed what at first appeared to be a felon which on the third or fourth day was freely incised but with very little discharge. The wound was treated in the usual manner but the infection continued, involving progressively the hand, arm, pectoral and axillary regions; irregular chills and high fever were present ;smear and blood culture demonstrated the presence of staphylococci. Active, illuminative and supportive treatment was given but with no appreciable favorable results. In consultation it was decided to resort to mercurochrome by the intravenous route and 20 cc. of a 1% solution were given. There was no reaction other than a slight rise in temperature. Patient passed a fair night and the following morning, about sixteen hours after the injection, showed signs of improvement; temperature was lower and she felt more comfortable. Twenty-four hours after the first dose a second dose of like amount as the first was given, after which the symptoms rapidly subsided and the patient made a rapid recovery.

This patient was extremely sick and in the opinion of the physicians in attendance the mercurochrome turned the tide in her favor.

DR. C. W. ADAMS (Globe, Ariz.): I was very much interested in this case. It seems to be another one of those rather phenomenal cases where we get a complete sterilization of the blood after a very profound infection. My only excuse for making any remarks whatever about this paper is that I have under treatment at the present time a woman who is pregnant for the first time. She has been very desirous throughout her married life of having a baby. She had one sister who died following an infection at the time of delivery. She has had in the past year one or two attacks—rather mild—of pyelitis and, in view of the cases that have been reported by Dr. Young, I should like to ask the doctor whether or not he knows anything about the treatment of pyelitis of pregnancy with mercurochrome?

DR. W. O. SWEEK (Phoenix, Ariz.): My experience with the colloidal metals was in 1912 and 1913. We were injecting a series of cancer cases at the Skin and Cancer Hospital in St. Louis, with colloidal metals and various other substances. One of the first things I noticed after the injection of colloidal copper was the disappearance of the odor and a rapid cleaning up of the infected area of the open cancer. As you all know that is a very difficult thing to deal with. That led me to further experimenting with colloidal copper in infected wounds and I must say that the results were not very remarkable, about the same result that you get with mercurochrome. I want to sound a word of what I believe, from personal experience, if such is admitted in a scientifc discussion,—do not expect too much. We are going to have some sad disappointments with mercurochrome. Go slowly and cautiosuly.

DR. GRANT MONICAL (Phoenix, Ariz.): The reports of the cases where mercurochrome has been given are not very numerous and it occurs to me that the recital of two or three of these cases here sound very inconclusive, and that the same results might have been obtained without the mercurochrome. I should like to ask about the use of the method in puerperal septicemia.

DR. J. B. VAN HORN (Closing): With regard to the inquiry about the use of mercurochrome in pyelitis. There is one case I know of, not in my own practice but a patient of Dr. Schultz. This patient had pyelitis and the doctor thought it offered a good place to try mercurochrome; he says he administered the usual 5 mgm. dose advised by Drs. Young and Hill and that he

did get a terrific reaction similar to that in the streptococcus case reported here, and that he had a great diminution in the amount of pus and great improvement in the general condition of his patient. He says that she was quite neurotic and seemed hysterical and, due to the reaction she had immediately following the injection, promptly informed him that if any one ever approached her with a syringe that had anything red in it, he would have to get her unconscious before being allowed to use it again; so, while his experience looked like he was getting a good result, the patient bucked and he did not get to finish.

Regarding Dr. Monical's inquiry about the use of mercurochrome in puerperal septicemia. I think it is in the Journal of Obstetrics and Gynecology where a report is made on several cases of puerperal septicemia where mercurochrome has been used with equally as good results in several cases as we obtained.

I have never seen a patient as sick as this boy Summers and yet make a recovery. The case was so remarkable, with the boy so intensely ill one night that he was apparently doomed and twenty-four hours later his condition is so much improved that you would think he was on the way to a good convalescence.

The object in this report is not to encourage experimenting in every type of infection or every case of abscess formation with the expectation of securing good results, but our results in this case justify the use of the procedure in this type of case, at least.

ETIOLOGY AND TREATMENT OF LOCAL HAY-FEVER*

GEORGE TURNER, M. D., El Paso, Texas.

Nature's means of reproducing plant life is through the formation of fertile seed. The flower is the forerunner of the seed and in this stage fertilization occurs through the agency of a substance known as pollen. All trees, shrubs, weeds, grasses, etc., bear flowers, produce pollen and develop seed. The essential parts of the flower are the stamens and pistil. The stamens are usually several in number and separate structures which bear an enlarged body at the upper end known as the anther or pollen case. Each anther contains many pollen grains which are microscopic in size and are liberated, when ripe, by the natural bursting of the anther or pollen case. This is termed pollination. The pollen is scattered for the purpose of fertilizing the flower of plants of like species through two agencies; wind and insects. The wind pollinized plants are known as anemophilous plants. Their flowers are usually inconspicuous and their pollen is of small grain, light and buoyant. It is capable of being blown to a great distance and is the direct causative agent of hay-fever. The entomophilous or insect pollinized plants are usually of bright color, which attracts the insects. The pollen of these plants is of large grain, heavy and sticky. It adheres to the body of the insect and is carried from flower to flower by its visitations. These plants are not to be considered as a direct cause of hay-fever, but the pollen from some of them is toxic and a sensitive patient coming in direct contact with same will develop marked hay-fever symptoms.

It has been estimated by the U. S. Government that three and one-quarter percent of the people of this vicinity suffer from hay-fever. This estimate is perhaps low. The reasons for its frequency in semi-arid climates are; (1) the plentifulness of air borne pollens, which last through the long season of warm weather; (2) the unusual number of windy days; and (3) there is little rain to damage the pollen or prevent it from being blown about. Locations of little rainfall and much wind are nature's homes for air pollinated plants. However, every locality has so called hay-fever plants and should be surveyed to ascertain their identity, but locations of little wind and much rain are less inducive of hay-fever. In a region such as this the hay-fever season is almost nine months' duration. It begins in the early spring and lasts until frost. Its frequency is of considerable economic importance to us because people will not remain in a locality where they suffer from the disease, if they are not relieved.

(*Read before the Las Cruces Medical Society in April, 1924, and before the El Paso County Medical Society.)

The anemophilous plants of this locality, so far as investigated, are twelve in number. The season begins in March with the pollen of the cotton wood (Populus Macdougali) predominates with a few scattered balsamifera), which is followed about a month later with the Arizona Ash (Fraxinus Toumeyi). These trees are only of short duration but while they are pollinating they produce an abundance of pollen which is exceedingly toxic. Next in importance is the Bermuda grass (Cynodon Dactylon) which begins pollinating with the first warm weather and continues into November. This pollen is unusually buoyant, drouth does not kill it nor heat affect its toxicity. Its long season of pollination and highly toxic nature of its pollen protein makes it one of the most important causes of hay-fever. Johnson grass (Sorghum halepense) constitutes the only remaining member of the gramineae group of plants that is a cause of hay-fever in this locality. This pollen lasts from May until frost. It is a much heavier pollen than Bermuda grass and its radius of distribution is much more limited. There are several plants that begin pollinating in June and continue until frost: Russian thistle (Salsola pestifer) commonly known as "tumble weed," Orach or little annual salt bush (Atriplex Wrightii), careless weed (Amaranthus Palmari), greasewood (Sarcobatus vermicalatus) and sea blight (Dondia Suffrutescens). The most important member of this group is the thistle because its pollen is very light and the plant is very abundant. From the first of August until the middle of October there are three plants that produce toxic pollen; bur ragweed (Franceria Acanthocarpa), slender ragweed (Franceria tenuifolia) and cocklebur (Xanthium Speciosum). Of these the bur ragweed is most abundant and therefore the most important. There is another member of the ragweed family of local importance. This is the western ragweed (Ambrosia psilostachya) and the only true ragweed here. It differs from eastern plants of the same species in that the pollen grains are heavier and its radius of pollen distribution is more limited. Recapitulating these causative agents, early spring hay-fever can be traced to cotton wood. The ash is of little importance in this immediate vicinity. The cotton wood is very shortly followed by Bermuda grass which is frequently the cause of continued hay-fever from spring until frost, especially when supported by Johnson grass. These plants are followed by the mid-summer plants above mentioned, the worst of which is the thistle. Later in the summer the fall plants begin pollinating and continue together with the early summer and spring plants that run the whole season until all are terminated by frost.

Occasionally it will be found that a single sort of plant is the cause of a given case of hay-fever but most frequently several will be found to be contributing their respective portions of toxic protein. If the patient is found to be sensitive to the pollen of a single species it is only necessary to desensitize him against that particular pollen. If the patient is found to be sensitive to more than one species of plants belonging to the same botanical group it is only necessary to select the pollen to which he is most sensitive, i.e., the one producing the predominating reaction and desensitize him against that pollen, because when this is successfully accomplished his sensitization to other species of the same group will spontaneously disappear. But if the patient is sensitive to pollens from plants belonging to different groups it is then necessary to desensitize against each group separately and with separate courses of treatment, because desensitization to one biological group will convey no tolerance to an unrelated group. These separate courses of treatment may be administered concurrently or at different seasons depending upon whether different groups pollinate concurrently. If the treatments are given at the same interval the doses

should be administered on alternate days. Each case of hay-fever is an individual problem and there are two phases of fundamental importance to to what particular pollen or pollens the patient is sensitive and the which the patient is sensitive and the second is to determine in a quantitative way the degree of sensitiveness. The first is for diagnosis and the latter is to be used as a guide in treatment. The pollens to which the patient is sensitive are detected by the use of the cutaneous test. This is a procedure for reproducing on the skin the same sort of congestion, swelling, etc., that prevails in the conjunctiva and mucosa of the nose and throat during an attack of the disease. It is absolutely harmless, the technic is simple and the results are specific. It makes known the pollens to which the patient is not sensitive and brings out with precision the exciting cause. The test is accomplished by having in stock the pure dry pollens or a freshly-made one to fifty water solution of the pollen protein. The flexor surface of the forearm is cleansed with alcohol and allowed to dry. With a sharp scalpel two small cuts forming a letter X are made an inch apart for each test. The knife edge is simply pressed against the skin with no drawing motion, so that with as little trauma as is possible the outer layer of the skin is penetrated without drawing blood. As much dry pollen as will remain on the point of a fan-shaped toothpick is placed upon the cuts and moistened with a drop of tenth normal sodium hydroxide. This pollen past is worked into the cuts with the point of the toothpick to promote absorption. This is done with separate toothpicks for each pollen to be tried and kept moist with sodium hydroxide for thirty minutes when they are all washed off with alcohol, and the reactions noted. A control is made on which no pollen is applied but is kept moist with the alkali during the test period. If the pollen extract is used it is applied directly to the cut without the use of the alkali. A positive reaction consists of a raised urticarial wheel surrounded by a zone of erythema. No reaction should be considered as positive unless it measures as much as 5 m.m. in diameter. Patients highly sensitive to any one member of a botanical group will usually react more or less to other members of the same group. For instance, if a patient is highly sensitive to Bermuda grass he would also be expected to react in some degree to Johnson grass, etc. Occasionally a highly sensitive patient will be found who will react to all hay-fever producing groups in the vicinity and to every species in each group, consequently reactions are obtained from each pollen applied. The latter would require a separate antigen and a separate desensitizing course of treatment for each group.

After having determined the causative pollen or pollens, the next step is to prepare a suitable antigen or antigens for treatment. If the treatment is preseasonal a dilution of 1:10,000 will most likely be the highest dilution required. If the treatment is co-seasonal and the patient is suffering from hay-fever at the time, the highest dilution required will most likely exceed 1:10,000. For a preseasonal treatment dilutions of 1:100, 1:500, 1:5000 and 1:10,000 should be prepared. A solution test is then done with the 1:10,000 dilution. This test is done in the same way as the diagnostic tests except one drop of the solution is removed from its vial with a sterile hypodermic needle and applied to the cut. If any appreciable reaction occurs from this test a 1:20,000 dilution should be prepared and the test repeated. Treatment should not be begun with a dilution strong enough to excite a skin reaction. The average schedule, given according to the degree of sensitivity of the patient, is as follows:

Of the 1:10,000 sol.—
1st dose—1½ minims.
2nd dose—3 to 4 minims.
3rd dose—5 to 6 minims.

Of the 1:5000 sol.—
4th dose—3 to 4 minims.
5th dose—4½ to 5½ minims.
6th dose—6 to 7½ minims.
Of the 1:1000 sol.—
7th dose—3½ to 4½ minims.
8th dose—4½ to 6 minims.
9th dose—6 to 7½ minims.
Of the 1:500 sol.—
10th dose—3½ to 4½ minims.
11th dose—5 to 6½ minims.
12th dose—6 to 8 minims.
Of the 1:100 sol.—
13th dose—3½ minims.
14th dose—4 minims.
15th dose—5 to 6 minims.

The injections can be given every day until after the 1:5000 dilution is completed, then every second day for the 1:1000 dilution and every third day until the treatment is completed. If the 1:10,000 dilution is not beyond the threshold of the patient's sensitivity, as shown by the solution test, weaker dilutions must be gone through with before the above schedule is begun. After the treatment is completed the patient should again be tested with the diagnostic material to ascertain if he has really been immunized. If the diagnostic test still remains positive the treatment should be repeated. All preseasonal treatments should be begun six weeks or two months previous to the pollinating season of the pollen to which he is sensitive. This will give plenty of time to repeat the treatment if a repetition is found to be necessary. If a marked reaction occurs during the course of the treatment it should be stopped there and the dosage returned to that of the previous injection which produced no reaction.

The best time to treat hay-fever is six weeks or two months before it begins but unfortunately the majority of cases do not come under professional observation until they are in the midst of the season. The patient is then absorbing daily an unknown quantity of toxic protein from exposed mucous surfaces. This makes his sensitivity considerably greater and the dosage more confusing. Since great care must be observed to keep the dosage just below reaction, a dilution as high as 1:20,000 will practically always be required and in many cases higher dilutions will be necessary with which to begin treatment. Each case presents a problem all its own and the beginning point of treatment is found by preparing additional dilutions and reapplying the solution test. Complete cooperation of the patient is necessary and with this good results can be obtained in about eighty per cent of these cases. Follow-up treatment may be required in the co-seasonal as well as in the preseasonal cases and for this reason the diagnostic test should be reapplied after each treatment is completed.

The manner of gathering pollen for this work is of considerable importance. Most of the air born pollens are given up easily and completely to the wind by the natural opening of the anthers when the pollen is ripe. The pollen should be mature when gathered, which necessitates a close observation of pollinating plants because the anthers open rapidly and shed quickly. The flowers should be gathered when the pollen grains have attained their full size and just before the anthers are ready to open. The stems are placed in a flat pan of water and the flowers allowed to extend over the sides. The pan is placed on a table covered with paper which extends well beyond the overhanging flowers. In this condition the pollen cases will open in their natural way and the pollen will collect on the paper. If the flowers are gathered in the proper stage, shedding will begin within a few hours and continue for three days. The time for complete shedding will vary with the different plants. Each flower should be tapped gently once each day to jar the pollen to the paper. When the shedding process is complete the pan and flowers are removed and the pollen collected by sweeping it up with a clean paint brush. It is then sifted through a 200 mesh sieve to remove any shattered leaves, broken anthers, etc. Pollen collected in this way will be 95 to 100 per cent pure. The pans should be kept out of a direct sun-

light and away from a draft. Cottonwood, some of the weeds and Bermuda grass shed nicely in this way. Bermuda grass begins shedding very quickly after it is cut and the florescences should be gathered early in the morning while still moist with dew. It should be kept moist by wrapping in wet cloth until placed in the shedding pans as quickly as possible after cutting. Some of the pollens adhere so loosely to the anthers that the use of water pans is unnecessary. Bur ragweed, for example, will shed by a simple drying process. The florescences are gathered and spread thinly on paper and allowed to dry. When thoroughly dry they are lifted off the paper and the pollen is brushed up and sifted. There are a few plants, cocklebur, for example, which cannot be made to shed naturally. In this case the flowers are dried and the anthers stripped off by hand. They are then cracked by a grinding process and the pollen grains sifted from the crushed anthers.

There seems to be a wide difference in the toxicity of pollen from the same sort of plant when grown under different climatic conditions. There is a difference in the appearance of the plants. Two years ago I began gathering pollen with a view to determining the local anemophilus plants. After having gathered several pollens I began using the pure pollen as test material, and checking the result against like pollens obtained from an eastern biologic manufacturing company. The result was striking in that marked reactions would frequently be obtained with the local pollen and little or no reaction with the eastern grown pollen. Thinking that perhaps the particular batch of test material I had was faulty, I obtained test material from four different biologic concerns and ran tests concurrently on a series of cases. The result was the same as previously observed. The local pollens would frequently give marked reactions with little or none from any of the others. If this were true of the test material it would follow that the same would hold for the treatment antigen. Last year I ground pollen, extracted the protein and prepared treatment antigens in my own laboratory, and feel safe in saying that the results obtained were far better than any I had previously observed. There were about twenty cases treated with this sort of antigen and many of them were relieved. Some were not properly followed up and others did not complete their treatment. The process of preparing treatment antigen from dry pollen is a laborious task without considerable special equipment. A quantity of each of the various local pollens was gathered last summer for the Arlington Chemical Company and sent to them. I have been able this year to obtain from them antigens in concentrated solution, so now it is simply a matter of making dilutions of these antigens to treat any given case.

THE PHYSICIAN AND THE SCHOOLS*

OSCAR S. BROWN, M. D., Division Surgeon, A. T. & S. F. Railroad, Winslow, Ariz.

The physician in every community owes something else to that community other than to respond to calls, do the best he can for those entrusted to his care, and collect his fees.

The first duty of modern scientific medicine is to prevent disease, and the cure of disease is a secondary, although a very important, part.

Only a few years ago physicians concerned themselves with a disease only after it had made its appearance in the community.

But nowadays we are beginning to reason things as to cause and effect, and greatly to the credit of the medical profession, which sets it apart and elevates it above every other science, is that its chief aim is to abolish and to end that upon which it largely depends for its very existence—disease.

(*Read before the Annual Session of the Arizona State Medical Association, at Phoenix, Arizona, April 24-26, 1924.)

The physician, being one of the best educated men in the community, should take a part in everything which will tend to make that community a better place in which to live and where the health conditions are of the best. This entices or allures the best people of families to become permanent residents.

The physician, on account of his special type of education, is oftentimes the only one in the community who can advise and educate the parents and children as to how best to prevent disease.

A community may have exceptionally large and fine school buildings, yet they may be the best places for the breeding of infectious diseases because large numbers of children come in contact with each other every day, and the proper steps may not be taken to protect them from the infectious disease.

Epidemics among school children may occur without killing any of them or leaving any of them permanently damaged. Even so, children are kept away from school, the home inconvenienced, promotions are interfered with and, in many instances, the babies and younger children at home are exposed to the disease.

Now, who is responsible for seeing that the school children are protected? Our first thought is of the school board, the health officer and the school nurse. The physician is the one to assume the responsibility of furnishing the necessary instruction and education in the community as how best to prevent disease. He should take time to visit the schools and talk with the children, to meet with the Parent-Teachers' Association, and discuss ways and means to prevent disease in the schools and at the homes.

Purchase some late reliable work on Public Health and Preventive Medicine, study it and try to master the prevention of the more common epidemic diseases, those which school children mostly have, get some slides and pictures to show something of these diseases. Then occasionally give a general talk to the parents and older children at the school house. In this way you make a lasting impression, especially on the children.

Your State Board of Health will gladly supply you with literature issued by U. S. Public Health Service, telling in a condensed form of each of the contagious diseases and of the methods of prevention. These are given to the parents, older children and those interested in the prevention of contagious diseases.

In your talks try to impress them with the importance of absolute cleanliness in school and in their homes. I might add that you should so keep your own office that, at all times, it is a silent reminder that you practice what you teach.

Talk of the teeth and of their care, of the functions of the skin and importance of the bath; to the parents and older children of toilet conditions and of the danger of disease; in the rural districts of the earth toilets and of their care.

Tell them of the great benefits of the use of the well tested and established serums, antitoxins, etc., in preventing and curing diseases. Dwell upon typhoid fever, its prevention by prophylactic vaccine, how the disease is conveyed by water, milk, etc.; how to make drinking water safe, by boiling, etc.

Tell them of the Schick Test, of the giving of the toxin-antitoxin to develop an immunity, often during balance of life, to diphtheria.

Dwell upon the importance of reporting every case of sore throat to the Health Office or to some physician.

Rabies deserves attention. Children have heard of the "mad dog" from earliest childhood. Tell them of the peculiar actions of the rabid dog; better still, show them some pictures; I cut out some and put on cards and show them with the balopticon. This impresses them much more than just talk. Give them a short history of Pasteur and of the treatment, going into it quite well.

Trachoma should have its seriousness told to parents and children. If possible, show slides of it and give a short description of the disease, its symptoms, ravages, prevention and cure. Urge that all school children should be inspected, at least once a year, by a competent nurse or doctor. The lids should be turned and examined in a good light.

Smallpox deserves quite an extensive talk, especially as to its prevention by vaccination. Explain to them that it is a surgical procedure and that when done with surgical cleanliness no bad results follow.

Scarlet fever, measles, mumps, etc., each should have short talks as to prevention, telling them of the manner of conveyance of each one.

Tuberculosis has its place in these talks, more so when often one or more homes sending children to school have a case of this disease.

Last, and of great importance, instruct both parents and the children over fourteen years of age regarding social hygiene. It is best to talk to the boys and men alone, and to the mothers and young girls alone.

The U. S. Government will aid you in securing slides and cards for young men and women. For young men the "Keeping Fit" sets are of value in this work, as are the ones for "Young Women and Girls."

Few people realize what physicians know, that during the great war France lost about 1,350,000 lives, that the U. S. A. during the same period lost about the same number by syphilis, leading by a wide margin tuberculosis, which is next on the list.

I hear you say, "I cannot take time to do what you have outlined; I am a busy man; it's impossible." You can take time; you should do this studying; you need it to properly discharge your duties as a physician to those who employ you. Besides, if you look only to the selfish, self interest side, it will pay you. It is good business.

The thought I wish to leave with you is that each one of us has a common responsibility in seeing that the schools in our communities, whether they be country, town or city, are safe places in which the children can meet and work. That they are not breeding places for epidemic diseases and therefore a menace to the children, the community and the state.

DISCUSSION

DR. H. R. CARSON (Phoenix, Ariz.): The speaker is school doctor in Phoenix to about eight thousand children. We have two school nurses to assist with the examination of these children. At the beginning of the year the children are first examined for trachoma, because of the prevalence of trachoma among the Mexican children in this district. The rest of the year is spent in routine examinations and special cases sent to the school office each morning by the teachers. Physical defects are called to the attention of the parents, that they may have them cared for by their family physicians or, if indigent, by the free clinic of the Social Service Center. We can point out the defects, but we cannot force treatment. Christian Scientists, who do not believe in medicine; Pentecostals, who believe in prayer to cure; and others, who are antagonistic to the medical profession, fail to care properly for these defective cases. So, naturally, when these children enter the University they still have their defects. Our High School does not maintain any nurse or physician for medical supervision, nor do many of our rural schools. Sometimes, our own profession seems to be forninst the school nurse and school doctor and assure the parents of these defective children that the children are all right and need no attention.

We have one room, called the Open Air Room, with accommodations for twenty underweight children—not tuberculous children, but those with predisposition to tuberculosis. The room is entirely open upon two sides, except for screens. The children are transported to and from school, receive milk at morning and afternoon recess, get a hot lunch at noon, and have an afternoon nap. Children are selected for this Open Air Room and we have need for more accommodations than we now have.

One of the greatest difficulties of the school doctor is exclusion of children of families having contagious or infectious diseases. Frequently minor or mild diseases of childhood are not seen by a doctor and reported to the Health Department; but when seen by a physician are often not reported, and frequently, when reported, are not quarantined. This allows rapid transmission of these diseases through the schools and frequently increases the severity of a previously mild disease. Let us hope that our profession will, in the future, use greater care in sending children to school from homes where other children have contagious diseases. A modified quarantine in a home where the wife is

nurse and cook to the rest of the family is not much of a quarantine.

DR. Z. CAUSEY (Douglas, Ariz.): Rosneau has said "that we have at last found out that we send the physical as well as the mental part of the child to school." In other words, we have learned that we send the whole child to school. This is a very encouraging and valuable discovery from the standpoint of both mental and physical fitness. It is not possible to develop a well rounded man or woman without giving very close attention to the physical as well as the mental makeup of the child. It is my opinion that but few, if any, of our schools are doing their duty along this line. Yet we are doing more each year and the results being obtained will eventually bring us to do our full duty toward our children. Medical inspection of school children is a comparatively new innovation. I believe it was in Philadelphia in the year 1894 that this work was first begun. It was done at first for the purpose of controlling contagious diseases among school children. The experiment was found so successful that other large cities of the East adopted the system in rapid succession, until now it would be difficult to find any city or town of any consequence that is not making a stab, to say the least, at some form of physical inspection of school children. I believe that medical examination of school children is one of the greatest preventive measures that has been undertaken to date and such a pity it is that the heads of our schools are so slow in recognizing the great and far reaching value of it.

Dr. Van Horn spoke of his experience in examining university students. What a lamentable state of affairs! When we send so great a percent of our boys and girls to the university, there to find that they have some physical disability that will hinder them in their university work, to say nothing of their physical inability to cope with the arduous duties involved in our modern life when they are out of school. Parents do not know these facts and will not until we have annual physical examination of every child who attends our schools. When this is done we will cease to send such a large percent of our boys and girls to the university, there to find out for the first time that they have some physical defect which might have been obviated or cured had the fact been discovered earlier. This public health measure should not be allowed to rest until every school in the state has adopted a thorough system of annual physical examination of every school child. I think the doctors would be willing to give some time to this important work at the beginning of each school year, or a better plan would be to employ school physicians for the work.

I am still preaching that the medical profession is not doing its duty in presenting these questions of public health and in insisting that those in authority put into practice the many curative and preventive measures that have been found so useful for the protection and development of the school child, the future citizen of this great state.

DR. J. B. VAN HORN (Tucson, Ariz.): It might be of some interest to you, in this connection, to know about what the state of affairs is with the students as they arrive at the University. At the beginning of the first semester, we examined 597 boys. Out of that number there were 222 cases of manifestly diseased tonsils; there was pulmonary tuberculosis of sufficient extent to reject 68 boys from military training; there were 43 cases of organic heart disease. I do not know just how far the physicians are responsible for those conditions, but it looked to me, as we went through and tabulated our findings of our school children that have reached the University age, that our percentages are pretty high. There must be a great deal of room for improvement in the health of school children when they are still carrying as many of those diseases through childhood and up to the University age.

Those are some of the bad things we found out at the physical examination of our students. We also found our good side. One thing that we are very proud of is that out of that number of examinations, together with 128 more at the beginning of the second semester, we still have to find our first case of venereal disease, and, up to the present time, we have not seen a case of venereal disease in the University student body.

LEPROSY, WITH REPORT OF A CASE IN ARIZONA

NELSON D. BRAYTON, A. M., M. D., Miami, Arizona.

A case of sporadic leprosy is a matter of never failing interest to the body politic of the community in which the leper is discovered, and an unusual scientific interest is precipitated by the occurrence of so rare a disease. Hence the reporting of this case.

Lepra, an endemic disease, is contagious in type and is due to the Bacillus Leprae, discovered in 1871 by the Norwegian physician, Hansen. Its occurrence produces structural changes in the skin, mucous membranes, nerves, bones, and other tissues, with resulting ulceration and

configuration of involved tissues which at times cause serious actual deformity and mutilation.

Occurrence is restricted to no land or country, although the north temperate zones are remarkably free from the disease. There are probably 3,000,000 or more lepers in the world, the vast majority of whom are in China. India, Japan, Arabia, Africa, South America and the South Sea Islands are endemic foci of the disease, and Mexico and the West Indies have its unpleasant prevalence.

In the United States, regions in Louisiana, California, New York and Minnesota have a constant leper problem with a census of about two hundred lepers.

It is doubtful if the remainder of the entire United States would increase this number to 250. Hence we may infer that the United States has but one leper to each 400,000 population.

The Bacillus Leprae is the causative factor. It stains similar to Bacillus Tuberculosis, with which it is morphologically comparable. Specimens are readily obtained from any leprous nodule or nasal smears. When present it is found in astonishingly myriad numbers. The irritations of these bacilli give rise to the group of granulation tumors so similar to those of tuberculosis and syphilis, and the large round leprous cell with vacuoles is as distinctive as the leper bacillus.

SOURCES OF CONTAGION

Period of infectivity. All leprologists believe the nasal mucous membrane the most likely port of entry of the bacillus. Initial lesion, or ulceration and history of the same is invariably absent. Repeated shocks of the bacillus are believed essential to infection. Thus one may live with lepers for years and never show manifestations of the disease. Then the unhappy moment of lessened resistance appears; the leprous shock prevails and the individual becomes leprous. The shortest reported period of infectivity is three months. Longer periods of ten to twenty years are much commoner. Immunity seems to be confined to the temperate zone white Caucasian race. It is questionable if a dozen cases have been acquired in the United States by pure Caucasian whites of long time residence. The reason of this immunity is entirely unknown.

TYPES OF THE DISEASE

Two distinct types of the disease are recognized; the tubercular type and nerve leprosy. The tubercular type is essentially a skin multilation. Enormous quantities of the bacillus producing the distinctive lepra cell intermingled with small round cells and sclerous fibrillation produce the odd nodulations which with contractures create those mutilations which make leprosy instantly recognizable and repulsive. Hence the enlarged pendulous ears, the hanging cheeks, the furrowed brow, the atrophied nose, the sclerosed cornea with resultant blindness, the alopeciated eyebrows, the retracted fingers, the gangrenous, ulcerous edematous calves and ankles.

The nerve involvements produce a different type. Here we have the man-en-grif hand, the perforating ulcers of the foot, the mental hebetude, absolute and profound, the hyperesthesias, the sexual impotence, the skin atrophies, the glandular decadence and ofttimes death, swift and terrible.

Both types may intermingle and it is rare not to be able to feel in any leper an enlargement of the superficial ulnar nerve which spells some involvement of the whole nervous structure.

PROGRESS AND TREATMENT

Like all bacillary diseases producing granulomatous tissues, leprosy may be self-limiting or may run its own fatal course. Periods of abeyance are the rule mingled with ever increasing severity of its recurrence. He may live five years; he may live 30 years. Then intercurrent disease, notably pyemia or pneumonia shortens his life. In the United States the span of life is reckoned as about ten years.

Treatment is varied. Alterative, tonic, reconstructive, serological. The similarity of pathologic lesions to syphilis has suggested the usage of bichloride of mercury and salvarsan. The similarity to tuberculosis has prompted the use of serums and in return the similarity of the stain of the tubercle and leper bacillus has prompted the usage of an empiric drug, chaulmoogra oil, in tuberculosis. Of all the numerous remedies chaulmoogra oil or its derivatives seem to hold the highest place.

PROBLEM OF UNITED STATES LEPER

Congress has enacted legislation and erected at Carrville, Louisiana, an United States Peprosorium. Here lepers may be treated at the expense of the government. Unfortunately, sufficient funds are not at the disposal of the United States Public Health Service to provide for all lepers offered by the various states to this asylum, and Congress must be prevailed upon to increase the amount of its allowance to this institution and thereby increase the capacity. So far, no Arizona leper has been enabled to enter this federal institution.

REPORT OF A GILA COUNTY LEPER

Individual, Juan Ortego, age 38, was a patient of mine seven years ago. At that time was a laborer on the Miami High School Building. Had no ulcerations, had atrophy of finger nails and beginning man-en-grif hands. He disappeared from the community when he was questioned about his leprosy. November 13, 1923, he reappeared in Miami and lived in abandoned mine tunnels away from town; rarely was he seen in town and then only at night. Again seen and recognized by me November 17, 1923. Has leonine expression of countenance, alopecia of eyebrows, enlarged ears, nose, ulcerous and tubercular, thickened cheeks (see cut of photo), retracted finger nails, and terminal phalanges shrunken away, numerous leprous nodules over body, erythema on trunk, atrophy of skin over abdomen. No perforating ulcers, deep laryngitis, intense photophobia and lacrymation, with nasal hemorrhages.

TREATMENT

Chaulmoogra oil, 20 drops t. i. d. Improvement notable and marked. Open sores drying up. On March 14, 1924, deported to Mexico under laws of undesirable alien. This patient had once before been deported to Mexico from Coconino County, but as he had relatives in Gila and Graham Counties, decided to return to Arizona.

DISCUSSION

DR. BRAYTON: I would like to say in opening and closing this discussion that at three o'clock yesterday afternoon I was called in consultation by Dr. C. Sotel to see on Alderman Street in Miami a woman about sixty years of age. She had been a resident of Miami and Globe for seven years and had not been out of Gila County in that time. She had a well-marked case of leprosy, the duration of which she recognized as about six months.

Four months ago I was called to Turkey Shoot Canyon, one of the suburbs of Miami, and there I saw a patient whom I wanted and expected to see again, but she moved away the next day, and I am quite sure that this also was another case of leprosy the details of which I hope in the future to report more fully to our State Health Officer.

THE CURE OF PROSTATIC ABSCESS BY PERINEAL ASPIRATION*

W. G. SHULTZ, M. D., Tucson, Arizona.

In the treatment of this condition we have the liberty to choose between several methods, none of which can be chosen as the treatment par excellence. Lumb attempts to evacuate the pus into the urethra by pressure of the finger per rectum. But one attempt is made to deal with the condition in this manner. I have been successful in this way a few times, but always the abscess was very small and situated very close to the urethral canal. In some clinics we find attempts being made to evacuate these abscesses into the urethra by manipulation with the point of a small sound in the urethra. This method has numerous disadvantages in that it is a very blind method, seldom effective, and when it happens to be accidentally successful, generally gives insufficient drainage; it is ofttimes followed by an epididymitis and usually leaves a pocket which tends to drain and keep up a chronic infection. An intra-urethral incision through the endoscope is much to be preferred to this latter procedure, but

*(Read before the Pima County Medical Society, Tucson, Arizona, February 12, 1924.)

should very seldom be the method of choice in dealing with these cases. It is not so blind a method as the above and not so difficult of accomplishment, but it has those same two disadvantages, viz., epididymitis and a chronic draining sinus. But little choice of method remains in dealing with abscess of the prostate since Dr. Barringer has discovered and perfected perineal aspiration for relief of this condition.

The origin of the procedure was as follows; during anesthetization of a cancerous prostate for the introduction of radium needles, a peri-prostatic abscess secondary to a carcinoma of the prostate was found and it was thought unwise to operate upon such a case. An ounce or more of pus was aspirated and the patient left to see if this would not relieve him. It did perfectly and there was no recurrence of pus. With this experience in mind, it was thought that the method might be applied to prostatic abscess secondary to gonorrhea and in this way avoid the more serious and accepted operation. If the procedure failed, the case would be in the hospital and a perineal section for drainage of the abscess could be done.

Dr. Barringer reports fifteen cases, the only ones in the literature, I believe. Twelve of these were gonorrheal in origin, one carcinomatous, one tuberculous, and one a cyst of the prostate. Complete data is as follows: No. 1, no pus. No. 2, few drops of pus. No. 3, pus, 16 cc. No. 4, no pus. No. 5, pus 15 cc. No. 6, pus 30 cc. No. 7, pus 30 cc. No. 8, small amount of broken down tissue. No. 9, pus 16 cc. from each lobe or 32 cc. in all. No. 10, pus 15 cc. No. 11, pus 60 cc. at first aspiration, 30 cc. at second. No. 12, pus 30 cc.

You will please note that only one case required more than one aspiration and that one only two. Also only one case is given of a bilateral abscess. These cases are all hospital cases, and, so far as I know, no ambulatory cases were treated in this manner other than the one which I am reporting tonight.

I have performed this operation several times with results very similar to those reported in the above series, none of which had to be subsequently operated by the perineal section method and all of whom presented a more complete and satisfactory recovery than generally follows the perineal section method of treating these cases. The period of convalescence is much shorter as well as more complete. It is free from the dangers of a urinary fistula which may follow the more radical operation. The urethritis may be cleared up more rapidly, probably due to the fact that treatment can be started very soon after drainage of the prostate by this method and there are no postoperative tender scars to interfere or make manipulation more difficult. Epididymitis seldom complicates it and the patient does not have lowered resistance due to a more or less protracted convalescence period as usually follows perineal section. Urinary retention is relieved almost immediately by this method and obstipation of the bowel contents as well.

The course of procedure is as follows: The patient is put in the lithotomy position and the perineum prepared as for operation, but no general anesthesia is given. With the gloved index finger of the right hand in the rectum the perineum is anesthetized with one-half of one percent novocain, using a 3¼-inch 18-gauge needle. The anesthetic is injected ahead of the needle. The needle enters between the urethra and rectum and the point of the needle is palpated just anterior to the rectum by the rectal finger during its course up to the prostate. This is important, as upon it depends the accuracy with which the needle is thrust into the different lobes of the prostate or seminal vesicles. From this point the needle is pushed forward into the lobe of the prostate in which the abscess is thought to be. A 5 cc. syringe, which should be used during the injection of the anesthetic, may now be used to apply suction or a rubber

bulb syringe of the Asepto type may be used. I prefer the latter because constant suction may easily be maintained by the bulb, making manipulation easier and the search more successful. If pus is found, it is aspirated, the needle being gently pushed backward and forward and the point rotated so that all the pus may be aspirated from the abscess cavity. If the bulb type syringe is being used, it is well after all the drainage has stopped and you are through manipulating the needle to apply suction by means of a 5 or 10 cc. glass syringe of the Luer type, as this will sometimes more effectually drain the abscess. Each lobe of the prostate is punctured, and if there is any suggestion of supra-prostatic abscess or abscesses of the seminal vesicles, these are likewise punctured and aspirated, the guiding finger in the rectum alays indicating the way of the needle.

This method, in all probability, had best be restricted to gonococcus infections, as it is only in these that real beneficial results are obtained. It is not contraindicated, however, in abscesses caused by staphylococcus, streptococcus, or colon bacilli, but most of these have to be operated subsequently by the perineal section method.

My experience outside of gonococcus infection has been limited to but one case, which was a perirectal abscess in which the colon bacillus was the causative organism. In this case there was complete urinary as well as fecal retention. I aspirated the abscess in the office, recovering 130 cc. of very foul smelling pus loaded with colon bacilli. His urinary and fecal retention was relieved as was also his pain, but the condition recurred in a few days and this time I aspirated 80 cc. of the same pus. I did not irritate the cavity with Dakin's, which I now feel might have made a difference in my results. He was again relieved, but a few days later was in as bad a condition as ever. I advised operation by perineal section, which was refused. A few days later the abscess ruptured into the rectum and he was relieved. I am wondering what the results might have been had I continued the aspirations and had I combined Dakin irrigations with it.

I wish to report the following case because of several unusual features presented by it as well as the fact that he was compelled to be ambulatory during the time of treatment and, excepting Sundays, spent no time away from his work.

A young man, age 26. Family and past history not important excepting that he had gonorrhea during the past several years about seven times and did not know whether he had ever been cured of any attack, but had always been able to get very satisfactory results by using a prescription which I shall mention later.

During the past eighteen months he had been free of any venereal trouble. About two weeks before reporting to me and three days following a suspicious intercourse he developed a discharge. Concluding that he had gonorrhea, he called on his druggist friend to get his favorite prescription filled. This is it:

Zinc Acetate—17 grains.
Tr. of Opium—½ oz.
Glycerine—½ oz.
Rosewater q. s.—4 oz.

Due to the fact that the prescription contained an opiate, he was compelled to get a doctor's prescription for same. This he had no difficulty in doing, due, I am sure, to the doctor's realization of the great therapeutic value of glycerine and rosewater in these cases, more than to the nominal fee which he charged for writing it. Strange to say, it did not work a very wonderful cure in this, his most recent, case, probably due to the fact that this last group of gonococci with whom he had associated himself was of an unusually sturdy family or perhaps had been exposed to the above prescription on some previous occasion in another abode and had inherited a natural resistance for this usually most effective remedy. The doctor who wrote the prescription could probably enlighten us as to the various reasons for its failure in this instance, but personally I am compelled to confess my inability to explain this rather unusual failure!

After about twelve days of the above treatment he began to notice pain in the region of the rectum and a sensation of swelling in the same region. He was unable to get a bowel movement and was compelled to use very drastic catharsis every day in order to accomplish this. He also noticed a difficulty in starting the urinary stream, which was very small in caliber when started and was accompanied by dribbling at the end of the act as well as a sensation of not having com-

pletely emptied his bladder. The urinary act was very painful and had progressed to almost a complete retention when he reported to me for treatment. Catheterization relieved him very greatly, although the passing of the catheter through the posterior urethra was a little difficult and painful.

Rectal examination disclosed a much enlarged fluctuant left prostatic lobe, which he said felt like the thing that was giving him his difficulty in getting a bowel action. The right prostatic lobe was very much enlarged, hard, fibrous, but no fluctuation was noted. The abscess in the left lobe was drained by the above method and 60 cc. of pus evacuated. His relief was almost instantaneous, and the right lobe was not punctured. That night and the next day his urinary and fecal incontinence were completely relieved, as was also his pain. Two days later the pain and urinary incontinence recurred, however, and upon examination the left prostatic lobe seemed to be filling up again, but only slightly. The right lobe presented the same thick fibrous unyielding mass as at the previous examination. It was punctured and 90 cc. of pus recovered. Relief was again very marked, but there still remained some difficulty in the urinary act. Three days later the pain recurred, as did also the urinary and fecal incontinence. Both lobes were aspirated and pus (70 cc. from the left and 30 cc. from the right) recovered. Each abscess cavity was irrigated with Dakin's solution. Relief very marked. Five days later the pain recurred and both lobes were again aspirated. Pus (15 cc.) was recovered from the left lobe and irrigation with Dakin's solution done. No pus was recovered from the right lobe, although a very extensive search was made. A few cc. of blood was drained from what seemed to be the old abscess cavity in this lobe, however. Three days later his pain was recurring and 10 cc. of pus was drained from the left lobe, followed by Dakin irrigation as before. Three days later his pain was again recurring and 5 cc. of very bloody pus was aspirated from the left lobe. The right lobe yielded none, but remained quite enlarged and very hard. His pain persisted for about three days, but gradually subsided.

This case is of further interest to me because had he been so situated that he could have gone to the hospital for operation I believe that I would not have attempted to treat him in this manner, but would probably have advised an operation. I must add that on about the third day following this last visit when he says the pain was diminishing, with urinary and fecal incontinence relieved, a friend offered to pay for his treatment and prevailed upon him to report to another doctor, who completely relieved and cured him in a few days by using a rectal dilator and heater. The patient described the treatment as being one of rectal dilation.

Full credit for developing the above procedure for dealing with prostatic abscess is due Dr. Barringer and is hereby acknowledged.

OCCIPITO POSTERIOR POSITIONS IN LABOR WITH TREATMENT*

J. A. RAWLINGS, M. D., El Paso, Texas.

DEFINITION

Edgar defines it thus:

"The vertex presentation in which backward rotation of the occiput occurs in the first and second positions or in which a permanent occipito-posterior position obtains in the third and four positions. As a rule labor is prolonged in these cases, partly because the head does not flex properly on entering the pelvis and then does not descend into pelvis readily, partly on account of poor internal rotation."

Of all the complications that arise in labor, that cause delay, worry and trouble, posterior positions easily head the list. Then, too, they are more easily and frequently overlooked by the average practitioner than any other complication with which I am acquainted. Especially is this true in primipara, because many times the abdomen is so tight that an external examination helps very little and with a slight dilation of the os, one is at a loss to know just what position he is dealing with. In fact occasionally in the beginning of labor in these tight abdomens where the presenting parts are high and not engaged, we are unable to make out presentation satisfactorily, much less position, no matter how much we may flatter ourselves we may know about the matter.

As to the causes and diagnosis of these positions, there is very little difference of opinion and since this is true, I can do no better than to quote

(*Read before the El Paso County Medical Society, April 7, 1924.)

from Berkeley and Bomney on the causation and diagnosis, since they have stated the matter most concisely and succinctly. But when it comes to treatment, we find many divergent views and opinions, and I shall quote from these and give my own views at length later on.

CAUSES

The cause of this malposition is deficient flexion of the fetal head. This deficient flexion may be due to:

(a) Extension of the fetal spine, due in its turn to the maternal spine pressing against it when the back of the fetus is posterior to start with. Owing to this the head becomes extended and the forehead may be well in advance of the occiput, in which case the pelvic floor rotates it forward.

(b) As the head enters the pelvis, with the occiput posterior, the biparietal diameter, which is the broadest transverse diameter of the fetal head, will be lying backwards in a part of the pelvis where there is least room, whilst the bitemporal diameter will be lying forwards where there is most room. The head will therefore be gripped more tightly at the biparietal diameter, which is situated posterior to the fetal spine. As the direct uterine force is applied along the fetal spine, that part of the head most loosely engaged will be driven downwards, so that the forehead becomes lower than the occiput, with the same result as mentioned in (a).

(c) If the head is larger than normal or the pelvis smaller than normal, then the occiput as it enters the pelvis posteriorly will press tightly against the posterior inclined plane, which will direct it backwards into the hollow of the sacrum.

(d) If the fetal head is small, it may slip through the brim before it has become flexed. That this is not an uncommon cause of unreduced occipito-posterior positions is seen from the fact that in nearly 50% of these cases, the head is smaller than normal. Other causes given are old lacerations of the pelvic floor where resistance is increased, in disproportion between head and floor, as in very roomy pelves, or in undersized heads, in uterine and abdominal inertia and in certain deformities of the pelvis, such as justo minor pelves, kyphotic pelves, or in an unusually prominent and protruding promontory of the sacrum.

DIAGNOSIS

The diagnosis may be made by abdominal and vaginal examination.

Abdominal Examination: If in an abdominal examination, the limbs of the child are felt well to the front and much more easily than usual, whilst the back cannot be felt well and is turned towards one or other flank, this is an indication that the occiput is lying posteriorly, a supposition further enhanced if the fetal heart cannot be heard at all, or only faintly towards the loins.

Vaginal Examination: On vaginal examination the position of the occiput can be determined by the fontanelles, by the moulding of the head, and by the ear.

The anterior fontanelle will be easily felt on the right or left, as the case may be, and pointing forwards, whilst the posterior fontanelle can only be reached with difficulty, this, of course, being the opposite to what usually obtains.

It may be that, owing to the prolonged moulding and pressure, the caput succedaneum will prevent the fontanelles being felt, in which case the moulding of the bones may help in the diagnosis, for if it be remembered that the occipital bone is depressed below the two parietals in the moulding, then if one bone is felt overlapped by two, the practitioner will recognize that this is the occiput. Again, the two frontal bones are depressed below the two parietals under similar circumstances, so that, if two bones are felt to be overlapped by two others, the position of the frontal bones will be thus determined.

If this overlapping of the bones cannot be detected, then the practitioner must pass his hand into the vagina and feel for an ear, the free border of which will indicate the direction of the occiput.

To the above, as taken from Berkeley and Bomney, I want to add this: that when in doubt as to whether you have a posterior position, you will find that in posterior positions dilatation proceeds very slowly indeed and there is more likelihood of premature rupture of the membranes. So look out for a posterior position whenever you have tardy painful dilatation. I believe this slow dilatation is due to the lack of irritation of the nerve fibers in the external os, because of poor adaptation of the head to this portion of the lower uterine segment. This I will mention later in discussing the use of bags.

I want to add this to the diagnosis and it will apply to any condition where there is doubt as to the presentation or position. If it is necessary to know position, do not hesitate to introduce the whole hand into the vagina and into uterus also if required. Naturally your patient must be anesthetized for this, but in my opinion the knowledge and benefits derived from this procedure outweigh the dangers incurred. By so doing you are no longer in doubt, and many times cannot be sure of position in any other way.

FREQUENCY

Here there is a wide difference of opinion. Of the persistent forms, Edgar states that some 1 to 4 per cent occur, more than half of these occurring in primipara. This does not refer, however, to the percentages that start as such, for the total is largely in excess of that number. Williams gives the number as over 16 per cent and Irving Potter, of Buffalo, whose work I have seen and who delivers double as many women per year as any individual in the world, and who does most of his deliveries by elective versions and thus does not wait for complete engagement, tells me that he finds of a series of 200 versions, eighty-five were performed in primipara, and 115 in multipara. Forty of these were seen in consultation with physicians, and thirteen were in the care of midwives. One hundred and twenty-six cases were left occipito-posterior positions of the vertex. Forty were of the right occipito-posterior variety. But many cases that lie as posterior during pregnancy enter the pelvis as anteriors when labor sets in. For some reason, the explanation of which I have never found satisfactroy, five out of six posterior positions are of the right rather than the left variety.

TREATMENT

This may be divided into prophylactic and active or operative. Little can be expected from prophylaxis other than having the patient lie on the side to which the occiput points. This can be helped by placing folded blankets or pillows under the hips so as to make the side position more extreme, thus assisting rotation of child. Efforts at placing the patient in the knee, chest, or trying to change position by external manipulation has very little permanent effect.

One of the most important elements in treatment entering into these posterior positions which are prone to be long drawn out and painful, is to conserve the strength of the patient and thus her expulsive powers, by giving appropriate doses of drugs that tend to give rest and ease, while waiting for dilatation, which as already indicated is nearly always slow and painful. Of these agents, in my experience, none compare with some derivative of opium with scopolamin hydrobromid. Of these, I prefer morphine combined with scopolamin. I usually start with ¼ or 1/6 grain of morphine, with 1/200 of scopolamin and repeat with 1/8 or 1/6 of morphine, with 1/400 or 1/200 of scopolamin, every 2 to 6 hours, depending on effect, until dilatation is complete, or nearly so. If, as sometimes happens, these drugs excite, rather than soothe the patient, I substitute chloral hydrate and bromide of soda by mouth, in doses of 15 grains each, or double that amount per rectum, if not tolerated well by mouth. These doses are repeated in 1 to 3 hours, as indicated. Both of these methods seem to have a softening effect on the os, and aid in its dilatation, how, I am unable to say. If, after a pe-

riod of 12 to 24 hours, dilatation is not proceeding as it should, I then resort to bags, inserting the largest size that the cervix will accept and putting in a larger size if need be, when the smaller has been expelled, continuing the bags and sedatives until dilatation is complete, or gives promise of soon being completed. These bags seem to aid greatly in dilatation both by their hydrostatic and pressure effects, and also by close contact with cervix, irritating those nerves in the cervix which a poorly fitting head cannot do.

All of these means are to conserve the woman's strength so that she will not be worn out at futile efforts at dilatation and delivery and will have the necessary strength left to push the child through and thus deliver herself. Now, if, after a reasonable time has elapsed and the woman has labored hard, she seems unable to deliver herself, it is most probable that the case has resolved itself into what is known as the persistent type. However, even here, if pains are strong and the fetal heart sounds are good and the mother is not too much exhausted, the waiting method may win in the end. But if the woman is becoming exhausted, or the fetal heart tones are becoming impaired, we must resort to some operative method. In our choice of methods we are guided by the amount of engagement. First of all, do not attempt operative procedure of any kind until you have a dilated or dilatable os. Again, you must have anesthesia if you are to succeed in any operative interference. If the head is high and will not engage, and luckily these cases are few, then in my opinion podalic version is indicated, provided the waters are not all drained away and the lower uterine segment is not too thin, or the uterus in tonic contraction, when efforts at version might cause rupture.

In my experience the danger to mother is very much less with version than with high forceps, and the damage and danger to child no greater. I have seen heads crushed and mothers badly lacerated with efforts at extraction in high posteriors with forceps. In fact I believe that podalic version is preferable to high forceps under almost any condition.

In some cases where the vagina is short and lax, I have succeeded in pushing head up, before it became too well engaged, with two fingers in vagina and then pressing parietal part of head up and to right or left, as the case may be, at the same time pressing with other hand on temple of child in an opposite direction and then rotating and forcing head down into pelvis again. However, this can seldom be done and only under most favorable conditions.

However, there is one other method which may be tried not only in high but in medium types, which offers hope of success, and which I advocated some twenty years ago in a paper read before the Texas State Medical Association at Waco. At this time there had been very little said about this method and I could find but one reference in literature to it. I refer to the method of manual rotation of the occiput. With the patient on the back, hips well over edge of table and legs held by assistants, the hand is passed through the os, head grasped, and if engaged, gently pushed out of the pelvis and rotated anteriorly; at the same time the external hand reaches into the flank and rotates the body; otherwise the rotation will not remain. Then, when sure of rotation, I continue to hold my hand on the head and my external hand on the child, to maintain the position gained until pains return and the head is guided into the anterior position. The quick return of the contractions is aided by four minims of pituitin and stoppage of the anesthetic. For right posterior, the left hand is used, and for left, the right hand. Occasionally external pressure on the fundus will help in this engagement. Then, too, in some instances the fingers may slip past the head and grasp the shoulders and thus facilitate rotation. Always retain the grasp on the head with the fingers of the internal hand and assist and retain rotations with the

external hand until engagement occurs in the manner and to the extent desired. Now with the head anterior and engaged you can either wait for the natural expulsive forces to complete the delivery, or you can place on forceps and deliver, depending on condition of infant and mother. Always give careful attention to the fetal heart sounds in all these maneuvers, for the manipulations necessary may interfere with the fetal circulation and necessitate rapid delivery. In fact, the one great danger in this method is prolapse of the cord and the thing that one must guard against most carefully. I have used this method many times with great success and regard it as the best method of all when applicable. With an impacted head, or a tonically contracted uterus, this method is not to be tried.

In my earlier experiences I rotated the head half a circle rather than a quarter; that is, R. O. P. to L. O. A., but later I found this unnecessary. This method is worth a trial in nearly all cases. This is a method that I saw Dr. De Lee use two years ago, and the method that I think he prefers. However, he does not risk letting loose of the head after rotation, but prefers to grasp the scalp with a pair of tenaculum forceps and hold the head in position until he can apply the ordinary obstetrical forceps, thus delivering as any anterior position. Edgar favors bringing the head to the perineum with the pelvic application of forceps and removing same and making a cephalic application and gradually rotating as he delivers. Some prefer the Scanzoni application of the forceps, and in proper hands this works well, but unfortunately there are very few proper hands. One exception, of my acquaintance, is Dr. George Clarke Mosher, of Kansas City, Mo., one of the leading obstetricians of the middle west, who is quite an adept at this method and uses it in nearly all his persistent cases.

CONCLUSIONS AND SUMMARY

1. As to diagnosis, acquaint yourself with and practice in all cases diagnosis of position by external methods, for in the early stages of labor and often later more is to be learned regarding position by this means than by internal examinations.

2. Do not neglect pelvimetry, for to know your measurements aids you in prognosis and the management of your case.

3. Remember that poor and slow engagement, irregular pains and tardy dilatation are very suspicious signs of posterior positions.

4. When in doubt as to position, do not hesitate to introduce hand into vagina and into uterus also, if need be, in order to be sure of your diagnosis.

5. Do not forget that by conserving your patient's strength with the drugs mentioned, until dilatation is accomplished, you have left her with a surplus to finish the delivery, whereas if she is worn out with futile efforts at delivery, she will not have the courage and strength left to finish the final ordeal.

6. If dilatation does not proceed satisfactorily, use bags, for as a rule they are easy of introduction, stimulate pains and aid greatly in dilatation.

7. Do not allow the importunities of patient or friends to cause you to interfere until you have a dilated or dilatable os, and do not try forceps on a high or unengaged head, nor on a head that is still posterior or even in transverse, unless forced to do so in the interest of mother or child.

8. Do not resort to forceps until you have made an honest effort at manual rotation.

9. Do not forget that strict asepsis is just as important here as in any surgical operation, and govern yourself accordingly.

10. Finally, do not act hastily in these cases, for "time accomplishes wonders." So wait, and again I say, wait. Let watchful waiting and conservation of strength and nerve force be the watch-words in the management of these cases.

MANAGEMENT OF THE NERVOUS CHILD*

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There are two classes of nervous children—those suffering with some distinct nervous disease, and those in whom nervousness is due to heredity or environment. It is the latter class whom I wish to discuss in this paper.

Due to the physiological and anatomical peculiarities of early life, the infantile nervous system is very unstable and very easily upset by any exciting cause. The central nervous system of the infant is not only morphologically but functionally an inadequate organ, which is physiologically active only in part. Considerable areas of the brain, especially the cerebrum, receive their myelin at variable periods of infancy. This absence of myelin limits the conductive power of the nerve fibers. Because of this incomplete development of the centers in the cerebral cortex, the inciting and regulating influences of the brian are very imperfect. The spinal cord is highly developed and very active. Between it and the brain there is only partial coordination. With this lack of restraint, the uninhibited reflexes run riot. The baby lives almost a spinal existence. These conditions favor the rapid development of the nervous system, without any neurotic hereditary tendencies or external stimuli. The very marked variations in the frequency and regularity of the heart's action and changeable quality of the pulse, and the frequency with which the respiration assumes an intermittent and arrhythmic type, show that there is no equilibrium between the exciting and inhibitive powers of the nerve centers at this age.

Babies show clearly marked differences from birth. The phlegmatic babies at birth cry some and soon adjust themselves to their new surroundings, and fall asleep. The babies born of neurotic parents and reared in neurotic associations show early the symptoms of an unstable nervous system, and are most likely to develop the characteristic manifestations of the neurotic infant. These babies will immediately register their protest at being removed from their warm beds into the cold world and at being placed in irritating clothing. They will wriggle and squirm and cry until their nervous systems are exhausted. This lack of sleep and constant crying render their nervous systems more and more irritable. They develop indigestion and vomiting on any food, and often convulsions and fever from any irritation. They are often precocious and require much entertaining and soon become little tyrants, ruling the household. Added to the difficulties of these infants is the presence of the neurotic parents, who often show little inclination to train them.

If colicky, they are constantly surrounded with anxious care, and soon become the sole preoccupation of their parents. In these unhappy little creatures it is hard to distinguish between colic and the outcroppings of neurotic inheritance. At any rate, they are popularly supposed to be colicky, and the effect produced upon all persons interested in them is the same in both instances. They are picked up by the father, the mother, the grandmother and nurse and carried about, jogged, cajoled, laid across shoulder and knee, patted on the back, swung up and down and to and fro, and talked to by the hour. The sense of being touched seems as early and as well developed as the sense of touch. They soon learn the feel of the human hand and become hopelessly spoiled, thus augmenting their already overtaxed nervous systems. During their placid intervals they are the amusement of their parents and the entertainment of their relatives and friends. Their respon-

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siveness is stimulated in innumerable ways so that they are made to laugh and play when they should be quiet and asleep. It cannot be too often repeated, that during the first few months of early life there is absolute need of many hours of sleep, and of much mental quiet at other times, and that all shrill and glaring impressions and all irritation of milder degree, if long continued, exhaust the brain.

The human being is the only animal not permitted the peace of infancy. All other animals at this tender formative period are allowed to remain quiet and develop unmolested. Should an elephant come along and toss you up and down and swing you to and fro when you are in great pain, hungry and weary and praying for rest, surely your already overwrought nervous system would register its mightiest protest.

Improper feeding is one of the most potent factors in the causation of nervousness in infancy and one of the most irritating factors to the infants of neurotic tendencies; so that, as in so many conditions of infancy, the diet assumes prime importance, as much in prophylaxis as in correcting disorders of the nervous system. In early life these disastrous nutritional disturbances are seen in both the artificial and breast fed babies. As I have said before, no food agrees at first with these babies. The consequence is, in the bottle fed, every known food is tried by the parents without regard to the needs of the infant; or every known milk formula is tried by some doctor. It is a great mistake to prescribe cow's milk for every baby and insist upon it, for there certainly are lots of cases in which it does not agree. Used with intelligence, and with an appreciation of their contents, of the ages and conditions for which they are suitable, proprietary foods, undoubtedly, have their value in tiding over an annoying nutritional disturbance. It is their abuse and not their use that is so disastrous.

The temperament of the breast fed babies depends almost entirely upon the health and disposition of their mothers. Women of even, quiet temperament usually make the best nursers. Women of the unstable, nervous type usually make unsatisfactory nursing mothers, especially for their first babies. These mothers are very impressionable and easily worried. The last few months of pregnancy is a burden to them. The discomfort from pressure gives rise to various symptoms. Their timidity at this time keeps them in the house and deprives them of sunshine and a proper amount of exercise. They approach confinement with fear and apprehension. They know little of what is going to happen and they worry a great deal over what might happen. Their minds, constantly on their condition, have magnified the tales related to them by other women. Their friends have told them what terrible times they had, and the women of their neighborhoods have not neglected to remind them of the convulsions Mrs. Jones had or the hemorrhage Mrs. Smith had or the dead baby Mrs. Johnson had in her awful labor. After revolving all these possibilities in her mind for nine months and then going through an exhaustive confinement herself, the young mother is in no condition to secrete the best food for her infant. As the breasts fill with milk, she becomes much concerned over what effect it is going to have on her offspring. The phlegmatic sleepy baby makes matters worse; for, at first, it is hard to get him to take the nipple at all. He falls asleep and the mother, who has been told that it is the act of nursing that makes the milk come into the breast, wonders why he does not nurse and whether she is going to have enough milk for him. The high strung neurotic infant, born with an irritable nervous system, aggravated by his surroundings, hungry and colicky, brought to his mother, restless, screaming, wriggling blindly, sputtering, grasping at the nipple and turning his head away, makes the mother wonder whether her milk is

going to agree. It is really not right to expect it to agree. In adults we advise a nervous, tired dyspeptic to rest before eating, but we do not practice this with the exhausted infant.

The secretion of milk is closely dependent upon the nervous system and the daily life of the mother. Worry, distress, anxiety, sorrow, loss of sleep and rest decrease the flow of milk and make a high percentage of protein. Excess of protein in the milk is the greatest offender in the diet. It is relatively greater in amount before the milk equilibrium is established, and is increased by any unsettled condition of the mother. It is highly desirable to reduce this protein, but it is seldom possible to modify a nervous woman's temperament and it is quite frequently very difficult to remove causes of worry and anxiety. The scanty breast milk also seems often to act as an irritant, sometimes making the baby sick, and often making him cry with colic, flatulence and increased peristalsis; and occasionally starting greenness and looseness of stools. In cases where the mother leads a sedentary life and eats a large quantity of rich food, there is often a bounteous supply of rich milk which comes easily and which the infant gulps down in haste, only to repent at leisure. The result in either case is a dyspeptic baby, whose fretfulness often makes its mother uncontrollably nervous. A vicious circle is thus formed which makes a situation very difficult to handle. The tired, discouraged mother, in desperation makes up her mind that her milk does not agree with her infant and insists that something be done.

Since a baby has a greater tolerance for breast milk than for any other food, it would seem at first glance that the error in diet could be easily detected and easily remedied, but in all these cases the patience and ingenuity of the mother, nurse and doctor is taxed to the utmost to induce the colicky belligerent to agree to an armistice. When this can be done often the victory is won, for the mother, not hearing her baby cry and fret, believes all is going well and begins to stop worrying and gets some sleep and rest, and with the consequent better milk for a diet, the baby ceases to have dyspepsia. Sometimes with a thorough understanding of the needs of the case, if the baby is given a complementary feeding, he is satisfied and shows a marked improvement.

For the first few days after delivery the mother must have the greatest care and consideration; she must have the proper amount of sleep and be undisturbed by the baby except at feeding time. When she is up and around the house the daily cares must be made as light as possible. She must have recreations and respite from the constant care of the house and infant. There is nothing more tiring than looking after a baby all day and sleeping with one eye open at night to see that the little fellow keeps covered. If sleep is lost at night, it should be made up during the day.

The mother's diet should be general and nourishing, and contain a sufficient amount of vitamines.

The infant, removed from the warmth of its mother's body, should be kept warm—cold irritates the nervous system more than anything else. Regularity in all things pertaining to the infant is most important. Food must be given at regular intervals and not too often; every three or four hours is the best. Sleep must be at certain times each day and of definite duration. The infant must be left alone and permitted to grow up in quiet and amid peaceful surroundings and with freedom from undue excitement caused by the active admiration of so called friends and overfond parents.

All time must not be spent in trying to make his environment more comfortable. Something must be suggested by the physician to quiet these unfortunate little fellows. Too often our first impulse is to let them cry it out. Every time I give these in-

structions I wonder whether I understand the individual child. Certainly in many cases there is no surer way to keep up the restlessness and crying than to let the screaming, struggling, wriggling infant cry to the point of exhaustion; and in many cases there is no surer way to spoil the infant than to pet him with too many attentions. Very often if the baby is placed comfortably in a quiet, darkened room and the mother's hand is laid gently on the stormy little body and a low lullaby sung to him, sleep is instantly induced. If food is to agree with the baby, whether it be breast milk or artificial feeding, he must be quiet and at peace even if this state of mind must be accomplished by means of bromides.

There is more mental development in the third year of life than at any other age and children at this formative period are very impressionable. Their bodies and minds are formed by the associations in which they grow, and their conduct is directed to a great extent by suggestions derived from grown-ups around them. Their good temper and happiness depend upon their environment; constant crying, fretfulness, broken sleep, refusal of food, extreme timidity and thinness often indicate that something in this direction is at fault. Different temperaments of parents are reflected in their children. The nervous influences of home associations have a most profound effect upon them. Nervous, apprehensive parents who are not careful to hide from these children their anxiety and distress, rear them in an atmosphere of doubt and anxiety and force upon them a reputation for nervousness which they readily accept and constantly act upon. They are never out from under the solicitous eye of their parents long enough to develop their own intuition. Everything is planned for them. Their play is supervised and often they are made playthings. If children are permitted to play alone or together there is seldom nervous exhaustion, but adults set too stiff a pace for these youngsters and excessive stimulation makes for mental irritability and physical weakness. They are pampered and humored and no effort is made to control them.

The predominant characteristic in all these children who are directed and urged too much is negativism. They are habitual objectors. They learn their first lesson early. Even before the baby reaches the age of understanding, the mother playfully shakes her reproving finger at the little fellow and says, "No, No." Grown people must remember that the child's vocabulary is theirs and not its own. Very often the first word that an infant learns to say is, "No," and, unfortunately, words of reproof, negation and repression are among the first of its vocabulary. Some babies hear so much chiding that it is not unusual to see them joyously scold themselves. They are forbidden to do this or that, coaxed, cajoled and threatened long before they know the meaning of the words, but not before they understand the tone uttered. Nothing pleases them more than to see the mother repeat, time and again, the reproof forbidding them.

This negativism is seen in everything these children do, but their chief opportunity is in their refusal of food and sleep. They will clench their teeth, shake their heads and refuse to eat, or they will use every means to keep from being undressed, and if forced to bed, will wind up the day in a tyranny of tears. Constipation and enuresis are daily outcroppings of negativism. Excessive concentration of the mother's thoughts on these daily functions communicates itself to these children and they instinctively refuse to have a movement of bowels or to micturate when requested. Instead they will sit on the commode as long as their mothers wish them to, and soil their pants as soon as buttoned up. Refusal to go to stool, of food and of sleep, all become frequent or habitual as the child's conduct distresses the parent and as the child appreciates the reaction which he creates. Restraining, reproving, forbidding and threaten-

ing these children make them take delight in doing what they conceive to be wrong. No entreaty, no threat and no force will succeed. Negativism is due to mental unrest, and permanent cure will only be effected when faults of environment have been overcome, when the cause of nervous unrest has been removed, and when the child's mind is at peace.

These children suffer with one or more of a varied number of symptoms that differ widely with the individual. An abnormal degree of excitability is common in almost all of these children. Timidity and sensitiveness are striking characteristics. Disorders of sleep are very frequently seen, either in insomnia, restlessness, or night terrors. They usually sleep so lightly that they are awakened by the slightest noise or turning on the light. Fear is a most prominent symptom. They are afraid of everything strange with which they come in contact. We have all gone through the experience of trying to examine one of these panicky children with a stethoscope. Fractiousness, naughtiness and ungovernable fits of temper are symptoms hard to control. They are easily fatigued, mentally and physically and have palpitation of the heart and rapid breathing upon the slightest exertion. Functional heart murmurs are not uncommon. Some are very impressionable and indulge in all sorts of nervous habits, such as cough, sudden twitch of facial muscles, shrug of shoulder, grimaces, etc. Speech shows evidences of nervous instability in stuttering, which is nothing more than failure of speech to coordinate and keep pace with the child's haste to express ideas.

In older children, influences of school life, rushing from a hurried or unfinished breakfast to keep from being tardy, long hours in poorly ventilated rooms, neglect of personal hygiene, undue mental labor, worry about getting up lessons, imperfect recitations, strain of keeping towards the head of the class or fear of failing on examinations, create excessive nervous activity which, if not carefully guarded by parents, constitute a potent factor in the production of functional diseases of the nervous system.

Improper food, irregular meals and eating between meals, contribute to nervousness in childhood. Delicately built and anemic children, easily tired out mentally and physically, suffer readily from digestive disturbances. The excitable, active child, who is in a hurry to get out to play, or who does not have a healthy lunch, or who becomes tired trying to keep up with the older, stronger playmates, never does well. Soda pops, all day suckers, ice cream, hard raw apples, and early fruits play an important part.

Suggestibility is, in a large measure, responsible for the capricious appetites of these youngsters. Parents all too often say, in the presence of their children, that Mary or John does not like cereals or will not eat vegetables. They like to be the center of the picture and will go hungry in order to appear peculiar or different from other children. It is unwise to attempt force; excessive coaxing is equally unwise, for it only concentrates the child's mind on the matter. The child should be brought to the table rested and made to sit until the meal is finished. If he does not eat what is prepared for him he should not have anything until the next meal. It is certainly very wrong to supply articles of diet especially prepared for him according to his fancy. Nervous unrest produces prolonged dyspepsia which cannot be stopped by change in diet, but only by quieting the nervous system.

Masturbation is one of the most serious manifestations of nervous instability. The frequency of this neurotic habit is amazing. In most cases it is overlooked and the seriousness of it underestimated. It is true that pseudo-masturbation is practiced by most infants and when done in moderation is physiologic, but very often children of marked neurotic dispositions so persist in this self-gratification that it becomes a matter of se-

rious import. In its physiological limits it is not associated with psychic sexual impulses, but only with one or more of the erogenous zones. It is interesting to watch how various abnormal habits in these infants in later months become sexual. The act of nursing in normal infants, aside from satisfying hunger, is found to be pleasurable and soothing. In infants who have congenitally weak nervous systems, voluptuous consolation or even excitement is brought about by sucking movements with the lips, sucking the finger, the arm, the bedclothes or part of the clothing; or, as is so often seen, a diaper or small blanket or piece of cloth, or by rhythmic rubbing or pulling at lobe of ear, rubbing or picking the nose, scratching the scalp or other similar manipulations. Such habits often persist for years and probably, in a great many cases, lead to masturbation at a time when uncleanliness, adherent prepuce, irritation from diapers, tight drawers, chafing or cleansing, focus the attention of the child on the genitals, where he soon finds pleasurable sensibility and learns to repeat the experience with onanism.

In normal cases there is soon developed in the child a physiologic inhibition and the habit is of short duration, but in some this barrier is never developed and onanism becomes excessive and dangerous. The practice is more frequent in girls than in boys. In all these children, except those in whom there is no psychic barrier, there is a continual mental conflict which may lay the foundation of later neuroses. The consciousness of the concealment of wrong doing is harmful to the child's morale. The general health is depressed by repeated exhaustions. Masturbation exaggerates all the conditions of the neurotic child that induce him to seek solace in this perversion and adds to its already long train of nervous symptoms, mental hebetude, apathy and an uncertain and capricious disposition which make him anti-social and secretive. It is most essential that the condition be recognized early, for it is then that the habit can best be broken and the development of a sexual hypochrondriac prevented.

Onanism is a difficult condition to combat. All sources of local irritation should be removed and the child's health improved. Mechanical appliances in my practice have been futile. They seem only to focus his attention on the very thing you are trying to prevent. I have circumcised a number of boys with success; recently I circumcised two girls—one seven, the other nine—who seemed hopelessly absorbed in self abuse. Both were cured, and in a very short time one gained six pounds, the other eight.

Parents and doctors have a responsibility with these unhappy nervous children which cannot be shirked. We must study ourselves to see where the fault lies in their management, and we must study the child to find out how we can help him to make peace with himself and with the world. Medicine will do little good. We must not allow ourselves to grow impatient. It is sympathy and understanding that is the greatest factor in the regeneration of these children. We must judge them by children's standards and not by grownup standards. Too often our first impulse is to humor the spoiled child or to give him a spanking. Neither plan will succeed. The fault is not with the child, for he is the innocent victim of the way he is brought up.

Do something to prevent concentration of the child's mind on his difficulty. Talking in his presence about his deficiencies or his peculiarities must cease. Let him become absorbed in some interesting occupation. Give him self confidence instead of diffidence and self consciousness, but avoid efforts to make him precocious by teaching him things ahead of his age. Often because of irregularities in development, special aptitudes become manifest at unusually early age. It is most undesirable to further develop and cultivate this precocity, for it is an abnormal condition in the

human infant, which, if encouraged, may result in actual disease and permanent mental impairment.

Frequently the spirit of the timid child is broken for a long time by some slight reproof. Repression and thwarting the child in his legitimate purposes, coaxing and entreaty must stop. Parents must not spoil or indulge the child, but guide him with a firm hand. When authority is exercised too persistently and too remorselessly, the child so dominated loses independence. Snatching things away from children is bad. Do not threaten them with the doctor or police, nor deceive them in an effort to force obedience. The child's daily life should be arranged so that all mental exertion and irritation be reduced to a minimum. If the child's school work interferes with his appetite and digestion, or prevents him from getting the necessary amount of sleep and rest, he should be taken out of school for a few months or a year, and allowed to play in God's out-of-doors. All undue and unnatural excitement, especially theaters, children's parties and moving picture shows should be avoided.

Train the child to instant and unquestioning obedience; then he will eat what he is expected to eat and sleep soundly when he is put to bed, if only the appropriate suggestions and not the contrary are made to him. The outcome depends entirely upon the care and exactness with which treatment is carried out, and especially with how well parents can be instructed in the proper management of the child.

CHOLERA INFANTUM*

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Mr. President and Gentlemen: I deem it a waste of your time to discuss the causes, pathological anatomy and symptoms of cholera infantum, as you well know what our recent text-books have to say on this subject. Therefore, I shall call your attention to what I have gathered in my experience in the treatment of this disease, and shall mention such pathology as will be necessary to explain my ideas.

Omitting ordinary summer complaint, so called, caused from teething, excessive heat, indigestion, overfeeding or improper diet, which if maltreated or neglected may lead to cholera infantum, I will proceed at once to give my method of treatment for a well developed case of cholera infantum.

The irritated and inflamed condition of the intestines and sometimes the stomach, caused by the acid fermenting foodstuffs, impair or destroy temporarily the synthetizing function of the villi and denude the mucous membrane of the intestine, leaving a suitable focus for absorption of the toxins, acid ferments or partly unchanged foodstuffs, with consequent overburdening of the liver's detoxication function and allow the escape through it of foreign proteins and sugars, resulting in the so-called autointoxication. Under such circumstances, my first effort, if the stomach has not been thoroughly emptied by excessive vomiting, is to stop all food intake, and administer a dose of oil, and, after its action, wash out the intestines with a salt solution of one teaspoonful of sodium chloride to one pint of water; usually a half gallon of this solution is required to thoroughly flush out the bowels. The technic of the flushing of the bowels is very important. It consists in placing the infant in its mother's lap with its head resting on her left arm, and the right foot of the mother resting on the front round of the chair, and her left foot on the floor. Now with the infant's hips elevated, its head slightly downward, and its feet held upward and forward by an assistant, introduce a No. 12 soft elastic catheter, previously anointed, until it meets

(*Read before the Eddy County Medical Society, September 25, 1924.)

an obstruction, indicating that you have reached the sigmoid flexure of the colon. Now with the catheter between the end of the thumb and index finger of the left hand well pressed up against the anus, to prevent the escape of water, allow a little of the solution to escape into the bowel until the bowel is sufficiently dilated to allow the catheter to pass without any force. After the catheter has passed the flexure, push it onward gently while the solution is flowing, until its full length has been reached, then allow the solution to flow until the half gallon has passed. At the same time the solution is flowing from the syringe, remove the pressure at the anus and allow the solution to escape as fast as it is introduced into the bowel. The first water that escapes from the bowel may contain mucus and some small particles of undigested food, and in some cases small shreds of epithelium or mucous membrane, after which the water will pass perfectly clear. If the technic is not ocrrectly done, the flushing will be worse than useless.

Now two things must be brought about before nourishment can be reestablished, namely, the arrest of irritation of the stomach, and of the excessive diarrhea, which usually requires 24 to 36 hours. There being an abundance of water drawn from the tissues by increased bowel movements and, along with it, the alkaline salts, which is Nature's way of neutralizing intestinal acidity, there is an increased toxemia through concentrated blood and impeded kidney action, almost invariably leading to acidosis, which must be treated if it has occurred or prevented if it has not. This is accomplished by administering the following: Chlorinated lime, one grain; bicarbonate of soda, four grains; sugar of milk, five grains, diluted every four hours, until urine becomes slightly alkaline, which can be determined by two strips of litmus paper, one red and one blue, placed between two layers of absorbent cotton and placed over the meatus urinarius, held in place by the diaper, and watched each time the diaper is changed. In addition to the alkaline treatment, I prescribe the following mixture, three grains of which contains: Zinc sulphocarbolate, 1/10 grain; salol, 1/5 grain; bismuth salicylate, ¼ grain; bismuth subgallate, ¼ grain; pure pepsin, ½ grain; tinct. opium camph., 5 minims; calomel, 1/50 grain. I give three grains of this powder every two hours. For the purpose for which this powder is used, it is almost a specific. The watery discharges usually cease after the fourth or sixth dose. Now about this time, 24 hours have passed and the stomach had its required rest, and the toxemia is overcome, as shown by clearer mentality and better feelings on the part of the little patient; then food must be administered of sufficient caloric value to maintain its strength. If the mother is a healthy woman, put the baby back to her breast; if not, procure, if possible, a wet nurse; but if we fail in this, we will have to resort to predigested infant food, which is not very satisfactory.

Now, gentlemen, we may not have as favorable a case as I have described in this paper, and, on our arrival, we will find the infant in a semi-comatose condition, the mucous membrane of the lips and tongue as red as a cherry, rolling its head back and forth, tossing about first one hand and then the other, with a very rapid and feeble pulse. We know by these symptoms that our patient is rapidly undergoing acidosis, and if something is not done instanter, within a few hours we will have to sign a death certificate. Under such circumstances I flush the bowels as above stated and push the alkaline treatment, and, in addition to this, I administer four ounces of normal salt solution by hypodermoclysis every six hours until there is a change in the character of the pulse and the urine becoming alkaline, then proceed as in the first case described.

In conclusion, suffice it to say that there are many cases of cholera in-

fantum convalescing from the acidosis followed by a protracted intestinal indigestion, necessitating irrigation of the colon, morning and evening for several days. In such cases I give peptopancreatine compound with charcoal, five grains, after taking nourishment, every three hours. This preparation contains the active digestive agents, pepsin, pancreatine, diastase, ptyalin, lactic and hydrochloric acid with charcoal, and I get good results. It is impossible to outline every detail in the treatment of any disease. Each case is a unit unto itself, and complications that may arise should be met on general principles.

MY EXPERIENCE WITH TARANTULA BITES*

M. B. CULPEPPER, M. D., Carlsbad, N. M.

Case 1. In June, 1922, I was called to see a man, age about forty, a laborer, who gave the following history: Upon putting on his shoes on the morning of this day he noticed some foreign substance in one of his shoes that caused a slight pricking about his toes, but it was so slight that he did not remove the shoe until noon, at which time he removed the shoe to find a large tarantula clinging to the space between his big toe and second toe. There was no pain of note, so he brushed off the spider, put on his shoe and continued his work until about 3:30 p. m., when he noticed a tingling pain ascending the leg; this soon reached his body and descended the other leg as well as ascending his body and, in an hour longer, had reached the region of his heart and soon completely covered the entire body, by which time he had become very uncomfortable. He was, at this time, about forty miles from town and before reaching town he was suffering severely. I saw him about 6 p. m. and noted from his expression and symptoms that he must be in very great pain. After getting the above history I examined the point where the spider had bitten and noted no swelling, only a flea-bitten appearance at the point of the bite. I decided he must be frightened, although he persisted that he was not frightened, but that he was suffering the most excruciating pains; and I must say that he looked it. He stated that his bones were ready to burst all over his body, that his heart was cramping and that he could hardly breathe. He could not be still, but kept up a constant tossing on the bed, saying that I would have to give him some ease or he would die.

Physical signs revealed very little, no temperature, pulse slightly disturbed, pupils unchanged, no swelling about the point of bite, but it was not hard to note extreme agony by facial expressions and by the irregular type of breathing.

Deciding that a certain amount of his symptoms must be fright, I gave him one-eighth grain morphine by hypo. and assured him that he would be relieved in an hour. After about an hour I returned to find him complaining even more. I gave him morphine, one-fourth grain, and atrophine, 1/150 grain, and assured him again that would quiet him, but on returning in another hour I found no change. I repeated the last dose of morphine and, after watching him for thirty minutes, I could note no change except a drooping of the eyelids and slowing of respiration, but he still complained of the pains as before. I ordered bromochloral compound in teaspoonful doses every two hours, which gave him some ease. Not wishing to continue the last named drug for too long a period at such intervals, I left orders to give it only often enough to quiet him enough so he could stand it. But I found that I had to keep him heavily saturated for four or five days, after which time I could begin to leave it off.

He hardly slept or ate for ten days, but after this time he gradually came out of his frenzy, but was not able to return to work for thirty days. There was never any more sign of swelling or soreness about the point of puncture than when I first saw him. He looked like a man who had had a spell of typhoid fever after his recovery, notwithstanding the fact that he had never had fever nor any other symptoms except pains, restlessness and sleeplessness.

Case No. 2 was a young Mexican laborer whom I was called to see about two months later. While asleep on the ground at night, on turning his hand fell over on some object which he described as being soft and that it pricked him on the hand. He thought it might be rat and returned to sleep. Some hours afterward he was awakened with severe pains, which grew rapidly worse. I was called to see him about sunrise and found him suffering about the same as Case No. 1, only a flea-bitten spot where he claimed the bite had been inflicted, no swelling nor any other evidence except pain. I ordered him to the hospital, where I gave morphine as before, without any relief, but after putting him on the bromochloral compound managed him about as the former case. I kept him in the hospital one week and allowed him to return to his home, but it was still several days before he was able to return to his work. Diagnosis made on its likeness to Case No. 1, as he had not seen the spider.

Case No. 3 was a young man, merchant by occupation, who, after a hard day's work in his hardware store, went with his wife to the

(*Read before the Eddy County Medical Society, Carlsbad, New Mexico, Sept. 25, 1924.)

picture show. He did not feel very comfortable while at the show and upon arriving at his home he was seized with pains over his body and complained that his bones would burst, his heart cramped and respirations were very much interfered with. I saw him about eleven o'clock that night. He thought his trouble was caused by acute indigestion, as he had eaten a sandwich late that evening. I gave him an emetic, emptied his stomach, gave him an enema with good results, but had no relief from pains. I gave one-fourth grain morphine by hypo. and assured him that he would get relief. I was called to see him about five o'clock next morning and was told that he had not had any relief. It then occurred to me that his symptoms were the same as the Cases Nos. 1 and 2, but he denied at first that he could have been bitten. I could account for his symptoms in no other way and set out to find the tarantula, which was not hard to do, for among his wares where he had been at work was a fine large specimen. After questioning the man more closely he recollected that something had either stung or bitten him while at work and that he brushed it off and did not see it. I found the same evidence at the point where he had felt the sting that I had noted in the two former cases, never any swelling or redness, nor any marked pain at the point attacked. My treatment in this case was, after this, the same as before, and the patient was able to return to his work in about three weeks.

Case No. 4. A young farmer in May, 1924, while at his work, felt some object creep in up his pants-leg above his knee. In his efforts to extract it he felt it sting him a couple of times, but did not experience much pain, but came to my office within a couple of hours and explained that a large tarantula had bitten him and wanted to know if it would be necessary to do anything for it. Whereupon I immediately injected underneath the bites one-half percent solution of permanganate of potash and kept him under observation for twenty-four hours, by which time he had manifested very slight symptoms akin to cases previously reported. He was not detained from his work but for two or three days.

I find very little in my text books pertaining to the tarantula poisoning. Some of them seem to doubt that they have any poison and others claim they are of little consequence. I cannot remember of having seen anything on the subject in any medical journal and it is only after some persuasion that I have consented to write on this subject, hoping it might arouse some interest among the profession, especially of the Southwest, where the tarantula is most common, and that it might bring out the experience of someone else who, like myself, was dilatory in expressing themselves for the same reason that I have been and who might have used a more successful treatment than I have.

One thing strange to me is why it takes so long after the bite before the poison seems to reach the blood and cause the general or constitutional symptoms (the period in my cases has been from six to twelve hours) and that the primary symptoms are negligible. Another strange thing is why morphine does not relieve pain even in heavy doses and why the poisoning becomes so chronic.

In the Reference Handbook of the Medical Science we find more of the history of the tarantula than in any other work to my knowledge. It says that the Tarantula Fasciventris is the most famed and defamed of the spider family, which has been reputed to cause many peculiar symptoms, such as the tarantula dance, some sing, some cry and others laugh, and some claim that there is no human disease which cannot be produced by the bite. Another species known as the Malmignatte is found in Italy, Corsica and the Antilles, also in Spain, where it appeared in 1833 in such numbers and was so feared for its poison bite that the farmers of that region feared to leave their houses in harvest time and many people were dangerously bitten. It also states that the poisonous effect of spider bites varies at different seasons of the year.

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THE SOUTHWEST MEETING NEXT MONTH

Unless all signs fail, the Southwest Meeting in Phoenix, November 6th, 7th and 8th will be a notable one. Since the Association met here in 1921, many changes have taken place which will enable the medical profession of Maricopa County to offer a more elaborate clinical program and a more satisfactory entertainment of the Association.

SCIENTIFIC PROGRAM

The General Program Committee is composed of Dr. J. J. McLoone (Phoenix), Chairman; Dr. L. B. Cohenour (Albuquerque); Dr. Willis W. Waite (El Paso); Dr. W. Warner Watkins (Phoenix), ex-officio; Dr. Charles S. Vivian (Phoenix), ex-officio.

One of the especially interesting features of the program will be the symposium on tuberculosis, with papers sufficient to fill an entire afternoon. They include the following:

Dr. John W. Flinn of Prescott, Ariz., "Artificial Pneumothorax."

Dr. S. H. Watson, Tucson, Ariz., "Heliotherapy."

Dr. W. K. Gekler, Albuquerque, N. M., "Secondary Injections in Pulmonary Tuberculosis."

Dr. Frank J. Nordby, Fort Bayard, N. M., subject not yet announced.

Dr. O. Egbert, El Paso, Tex., "Mechanical Problems in Advanced Pulmonary Tuberculosis."

Dr. H. H. Stark, El Paso, Tex., "Tuberculosis of the Eye in its Relation to General Medicine."

Dr. S. Schuster, El Paso, Tex., "Nasal Tuberculosis."

Dr. K. D. Lynch, El Paso, Tex., "Tuberculosis of the Kidney."

Another feature of the meeting, which has heretofore been lacking in the Southwest meetings, will be the prominence of the industrial surgeons of the southwest, especially of Arizona. There will be several papers bearing more or less directly on the management of industrial cases. This class of papers include the following:

Dr. W. L. Brown, El Paso, Chief Surgeon of the El Paso & Southwestern Railroad, will speak on "The Operative Treatment of Fractures", using lantern slides.

Dr. A. C. Carlson, Chief Surgeon, and Dr. C. Hedberg, Assistant, of the United Verde Hospital, Jerome, Ariz., will write on "Fractures of the Long Bones."

Dr. W. A. Holt, Chief Surgeon of the Old Dominion Hospital, Globe, Ariz., will write on "Injuries to the Head."

Dr. John E. Bacon, Miami, Ariz., Chief Surgeon of the Miami-Inspira-

tion Hospital, will write on "Distinctive Features of Industrial Practice as Compared With General Practice."

Dr. George A. Bridge, Bisbee, Ariz., Chief Surgeon of the Copper Queen Hospital, will write on "The Industrial Malingerer."

Dr. R. H. Thigpen, Jerome, Ariz., Chief Surgeon of the United Verde Extension Hospital, will write on "The Medical Examination in Relation to Industrial Risks."

Dr. Frank T. Hogeland, Chief Surgeon of the Greene-Cananea Consolidated Hospital, at Cananea, Mexico, will open the subject of "Traumatic Hernia" with a paper, following which there will be presented the report of a special committee appointed by Dr. VanAtta to draft recommendations relative to what shall be considered traumatic hernia. The chairman of this committee is Dr. C. R. Swackhamer of Superior; the other members of the committee are Dr. F. C. Diver of Dawson, N. M.; Dr. George A. Bridge, Bisbee, Ariz.; Dr. R. L. Ramey, El Paso, Tex.; Dr. F. T. Hogeland, Cananea, Mexico.

Among the papers of general interest, there will be several very practical papers on subjects which are pertinent. Among them will be the following:

Dr. M. K. Wylder, Albuquerque, "A Discussion of Enuresis."

Dr. G. Werley, El Paso, "Cardiac Infarcts."

Dr. Paul Gallagher, El Paso, "Dye Therapy."

Dr. P. Ramos Casellas, El Paso, "X-Ray Study of Bone Tumors."

Dr. F. D. Garrett, El Paso, "Some Obstinate Cases of Chronic Diarrhea Due to Infection of the Duodenum by Giardia Intestinalis."

No special effort has been made to secure outside papers for this meeting, as we have followed the policy of favoring our own members. However, opportunity presented to secure three addresses from visitors, and they will be given place on the program. Dr. W. D. Sansum, Director of the Department of Metabolism of the Santa Barbara Cottage Hospital, will speak on "The Causes and Treatment of the Various Known Forms of Acidosis." He will illustrate this with a chalk talk and will demonstrate a simple method of determining the hydrogen-ion concentration of the urine.

Dr. C. C. McLane of Chicago is expected to present a paper on "Indications and Contraindications for Cystoscopy."

Dr. Robert V. Day of Los Angeles is expected to present a paper on "Urologic Problems of the General Practitioner."

Taking part in the clinical program will be Dr. Nelson W. Janney of Los Angeles, who will hold clinics on cases of perverted metabolism.

What is expected to be a pleasing feature of this meeting will be the use of a Trans-Lux Daylight screen for the lantern slides. By means of this, the lantern slides can be beautifully shown in an artificially lighted room, or a room with diffused daylight.

CLINICAL PROGRAM

The Maricopa County Medical Society has taken charge of the clinical program. The committee in charge of the clinic arrangements are Drs. H. P. Mills (chairman), H. R. Carson, H. B. Gudgel, Charles S. Vivian (ex-officio). Both the Sisters' Hospital and the Deaconess Hospital have turned over to this committee the entire disposal of their operating rooms for the three days of the meetings, and all clinics will be arranged through this committee. The medical clinics will also be arranged at the two hospitals mentioned, rooms being set aside for this by the hospital, and the use of the clinical laboratory and the x-ray department of each institution being placed at the disposal of the committee also. The facilities of the hospitals mentioned will enable all surgeons, internists or specialists who wish to hold clinics or demonstrations to be accommodated. Elsewhere in this issue of SOUTHWESTERN MEDICINE will be found a brief summary of the facilities at these two general hospitals and several of the special institutions in Phoenix.

St. Joseph's Hospital

PHOENIX - ARIZONA

Fulfills all the requirements of a Class A hospital

Staff:—Physicians of Maricopa County belong to the "open staff"; other physicians may send or bring patients to the hospital, so long as the staff rules are adhered to.

Staff Meetings:—Are held on the third Thursday of each month from October to May. At these meetings, the clinical work of the hospital is discussed and means for improving the general service suggested.

Records:—The clinical records are compiled and filed in accordance with the requirements for Class A hospitals.

Clinical Laboratory:—Trained technicians work under the direction of a medical pathologist; all routine and special examinations required by modern clinical practice are promptly performed.

X-Ray Laboratory:—Every facility for x-ray diagnosis and high voltage x-ray therapy, this department being in charge of a competent roentgenologist.

With a specially trained dietician working in conjunction with the clinical laboratory, this hospital invites the reference of cases for metabolic studies, particularly diabetic patients requiring the determination of their carbohydrate tolerance and insulin requirements.

Corner of Polk and Fourth Streets
(On Indian School Car Line)

Obviously, a complete program of the surgical clinics cannot be given at this time, as the nature of these and the participation of some of the surgeons will depend upon conditions existing when the time of the meeting arrives. So far as it has been arranged at this time—a month before the meeting—the following reservations have been requested:

November 7th; St. Joseph's Hospital

Dr. E. Payne Palmer, 8 to 12 a. m., General Surgery.

Dr. W. O. Sweek, 8 to 12,, Upper Abdominal Surgery Under Local Anesthesia.

Dr. J. J. McLoone, 8 to 10, Nose and Throat Surgery.

Dr. Fred G. Holmes, 10 to 12, Chest Clinic; Pneumothorax With X-Ray Demonstrations.

Dr. Harry B. Gudgel, 8 to 10, General Medical Clinics.

November 7th; Deaconess Hospital

Dr. George Goodrich, 8 to 12; General Surgery.

Dr. Nelson W. Janney of Los Angeles, 10 to 12, Endocrine Diseases.

Dr. H. T. Bailey, 8:30 to 10, Tonsillectomies.

November 8th; St. Joseph's Hospital

Dr. Willard Smith, 8 to 12, Thyroidectomy; Graft of Thyroid Into Cretin; subtotal Hysterectomy for fibroids; Tuberculosis of Pelvis; Thoracoplasty.

Dr. A. M. Tuthill, 8 to 10, General Surgery.

Dr. Charles S. Vivian, 7:30 to 9:30, Urological Clinic With Fluoroscopic Observation of Injected Kidneys.

Dr. Frank J. Milloy, 8 to 10; Clinic on Gastric Ulcer.

Drs. Martin and Schwartz, 8 to 10, Eye Clinic.

November 8th; Deaconess Hospital

Drs. Craig, Bannister, Dysart and Eaton, 8 to 12, General Surgery and Medical Clinics.

Dr. H. L. Reese, 8 to 10, Nose and Throat.

Dr. Charles S. Vivian, 10 to 12, General Surgery.

Dr. Charles B. Palmer; 9 to 12, General Surgery.

Dr. Orville H. Brown; 10 to 12, Medical Clinic.

There will probably be several additions to this list, as some of the prominent surgeons and clinicians of Phoenix and vicinity have not yet reserved time, but will undoubtedly be holding clinics. There may be adjustments as to places of operation or the dates, when the time arrives.

LOCAL ARRANGEMENTS

The local arrangements are in charge of a committee consisting of Drs. Fred G. Holmes (chairman); W. O. Sweek, R. J. Stroud and H. T. Bailey.

The hotel headquarters will be at the Hotel Adams, and the rates at this hotel will be as follows:

Single room without bath, $2.50.
Single room with private toilet, $3.00.
Single room with bath, $3.50 and up.
For double rooms, or two in room, add $1 to each figure.

At the Hotel Jefferson the following will be the rates:

Single room, without bath, $1.50 and $2.00.
Single room with bath, $3.00 and $3.50.
Double room with bath, $4.00 to $5.00.

At the Hotel Arizona the following rates will be charged:

Single room without bath, $1.50 and up.
Single room with bath, $2.50 and up.
Double room with bath, $3.50 and up.

At the Commercial Hotel, the following rates will be charged:

Single room without bath, $1.50 to $2.00.
Single room with bath, $2.50 and $3.00.
Double room without bath, $3.00 and $3.50.
Double room with bath, $4.50 and $5.00.

The Committee on Arrangements have not yet selected the place for the scientific session meetings, several locations being under consideration. There is quite a demand for exhibit space and effort is being made to provide for this adjacent to the place of meeting.

ENTERTAINMENT

The Committee on Entertainment is composed of Drs. George Goodrich (chairman), D. F. Harbridge, S. D. Little and James E. Drane. This committee has not yet announced any of their plans, but it is sufficient to know that they are at work, and

A Simple Test of the Dietary Value of Gelatine in Milk

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TAKE two 200 C. C. beakers of milk. To one add 2 grams pure, plain, granulated gelatine which has been thoroughly dissolved. Then to both beakers add 4 C. C. Hydrochloric Acid (10%).

Note the action of the acid on the plain milk. The curd formation is large and lumpy, while in the other the protective colloidal action of the gelatine not only has retarded to a great percentage this excessive curding, but the curd which does form is small and of very fine texture.

Here we have the reason why 1% of pure, plain, granulated gelatine will increase by 23% the nourishment obtainable from milk, through the prevention of indigestible curds caused by the enzyme rennin and hydrochloric acid in the gastric juice.

These findings are based upon a series of feeding tests in the research of the specific uses of edible gelatine conducted by Thomas B. Downey, Ph.D., Fellow at the Mellon Institute, University of Pittsburgh.

It is necessary to add a word of caution to use only the purest of plain, granulated gelatine, free from artificial flavoring or disturbing acids. For forty years the highest standard of gelatine purity has been represented by

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the delegates and visitors, from the time of their arrival until they depart, will know that they are in the hands of friends. This committee is authorized to select the Ladies' Auxiliary Committee, for the entertainment of visiting ladies.

The Committee on Finance, which will perform a very important piece of work, consists of Drs. R. W. Eaton (chairman), J. M. Greer and A. J. McIntyre.

Mr. J. H. McWhorter of El Paso has been engaged to report the discussions. This will be a very pleasing bit of information for those who will discuss papers, since Mr. McWhorter is well known throughout the southwest for his efficiency and accuracy in reporting medical meetings.

A very flattering interest is being shown in this forthcoming meeting by practitioners in old Mexico, and a special effort will be made to induce as many of them to attend as possible.

CLINICAL FACILITIES FOR THE SOUTHWEST MEETING

Those who attended the 1921 meeting of the Southwest Association in Phoenix will recall that the surgical facilities available there, at that meeting, were very inadequate. They will be glad to know that this condition no longer obtains and that the clinical program will be an excellent one and that the facilities available will be entirely adequate for all surgeons who wish to work and for all members and visitors.

At St. Joseph's Hospital, since 1921, the new surgical department has been constructed, on the ground floor of the east wing. This department contains three commodious operating rooms for major surgery, a similar room for work upon the head, and a smaller specialist's room. There has recently been added a urological room, which is adjacent to the x-ray department, where cystoscopic work is done and where this can be combined with x-ray work on the urinary tract. The clinical laboratory and x-ray department is adjacent to the surgical wing, and will be utilized for medical clinics. Other rooms in this wing will be set aside for medical clinics or demonstrations.

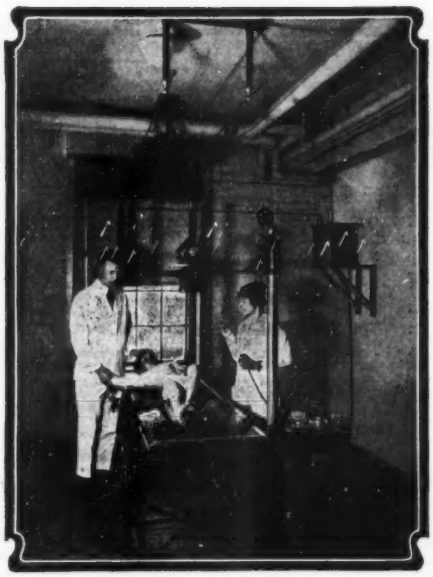
The Arizona Deaconess Hospital was opened about a year ago. It was built at a cost of about $400,000, and has 100 beds. It also has three commodious operating rooms for major surgery and one room for specialists, all on the top floor. The urologic room for cystoscopic work is on the first floor, where are located the clinical laboratory and x-ray department. Medical clinics will be held either on the first floor, or elsewhere in the hospital, as may seem most convenient.

St. Luke's Home for Tuberculosis has undergone extensive improvements since 1921. It has an entirely new administration building, with offices, examination rooms, and x-ray department. By the time of the meeting the new dining room will be completed, and this sanitarium, which now accommodates 80 patients, will take its place in the first rank of the sanatoria of the west, in equipment and buildings, just as it has for years in its medical work.

The Phoenix Sanitarium, which is just being completed, after having burned last winter, offers unique accommodations for tuberculosis cases, so far as Phoenix is concerned. The main building upstairs is designed to accommodate eight patients to whom expense is no object, there being eight suites of rooms, each with inside room, bath, toilet, and sleeping porch. Each room will be equipped with radiophone attachments connected with a central radio plant. This building also contains, downstairs, the offices, dining room and kitchen, clinical laboratory and x-ray laboratory, with operating room for minor surgery.

MARICOPA COUNTY (Arizona) MEDICAL SOCIETY

This Society held its first meeting of the season on Saturday evening, October 4th.



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The meeting was held at the Deaconess Hospital, where dinner was first served in the dining room, after which the members adjourned to the lecture hall for the discussions and scientific program.

There were about forty members and visitors present. Dr. Charles S. Vivian, president, presided, and Dr. G. B. Couch acted as secretary in the absence of Dr. Phillips.

The application of Dr. E. L. Hicks was presented by the Board of Censors, with their approval, and he was elected to membership.

Time was given Mr. Eben Lane and Mr. Frank Jefferson of the Advervising Club to explain to the Society a misunderstanding which had arisen regarding the advertising campaign which was about to be inaugurated.

Following this, Dr. F. T. Fahlen read a paper on "Heart Block", which was discussed by Drs. Burtch, Jordan and Gatterdam.

The remainder of the program was occupied by Dr. H. R. Carson in relating some of the things which he had learned during his summer's work in eastern centers of medical learning. He was still lost in Chicago at the close of the meeting, and will be allowed to resume his journey at some future gathering of the Society.

This is the first of the regular meetings, which occur on the first and third Saturday evenings of each month.

DR. E. A. GATTERDAM, member of the Veterans' Bureau Hospital at Prescott, is temporarily in charge of the work at St. Luke's Home, Phoenix, in place of DR. E. W. PHILLIPS, who is on vacation. The patients of St. Luke's were transferred from Prescott to Phoenix on October first.

YUMA COUNTY (Arizona) MEDICAL SOCIETY

This Society held a called meeting on Saturday evening, September 27th, to confer with Dr. W. Warner Watkins of Phoenix, who is the Councilor of the Middle District of the State Association. Dr. R. R. Knotts, president; Dr. E. G. Colby, acting secretary; Drs. Cain and Ketcherside were present. This was a rather informal conference devoted to a discussion of the best type of program for a society of small membership. The situation in Yuma County was found to be rather favorable for good clinical meetings. The County Hospital there has been improved and made into a modern institution, with good equipment. This was done by the county, and was then turned over to the County Medical Society, to be operated by them. Indigent patients are cared for at a rate agreed upon and the hospital is used by the members of the County Society for their private patients, the business administration being in the hands of a Board of Trustees, consisting of seven business men of Yuma County. The County Society, therefore, can use the clinical material of the hospital for study, since they, for all practical purposes, constitute the staff of the hospital. The plan of work for the winter will probably be based upon some such foundation, which offers great possibilities for clinical study.

PERSONALS

DR. H. K. BEAUCHAMP of Phoenix recently returned from a five weeks' postgraduate course in New York, devoted chiefly to the New York Postgraduate School. He visited other medical centers and clinics en route.

DR. ANCIL MARTIN of Phoenix is expected home about the middle of October from his European tour.

DR. WILLARD SMITH of Phoenix left early in September for a tour of the middle western and eastern medical centers, terminating with the College of Surgeons and Clinical Congress on Surgery in New York the middle of October.

DR. E. PAYNE PALMER of Phoenix will be among the Arizona members of the College of Surgeons who will be in attendance at the New York convocation and the Congress on Surgery the middle of October. He will return about November first.

DR. W. O. SWEEK of Phoenix returned about the middle of September from Portland and northwestern points, where he had spent the summer.

DR. E. J. GUNGLE, formerly of Tucson, has located at Gilbert, where he has taken over the practice of Dr. Thompson. Dr. Gungle, before moving to Tucson, was located in Casa Grande, and while there was a frequent visitor in Phoenix. He will be welcome in our medical circles again.

DR. WM. S. NEEDHAM, formerly located at Tremont, Ill., has located in Phoenix, where he will be associated with the Southwest Clinic. Dr. Needham is a graduate of the University of Louisville Medical Department, served his interneship in Chicago, and has been located at Tremont for the past five years.

DR. ROBERT W. CRAIG of Phoenix has returned, with Mrs. Craig, from a summer spent touring in Europe. Dr. Craig has resumed his practice in Phoenix.

DR. R. D. KENNEDY of Globe will be in attendance at the College of Surgeons' meeting in New York, this month. He expects to return in time for the Southwest meeting in November.

DR. JOHN G. McPHAIL of Chelsea, Mass., is in Phoenix for the winter.

The Management of an Infant's Diet

Malnutrition, Marasmus, Infantile Atrophy, Athrepsia

Mellin's Food	**8 level tablespoonfuls**
Skimmed Milk (1% fat)	**9 fluidounces**
Water	**15 fluidounces**

This mixture contains 56.61 grams of carbohydrates, thus supplying material that is utilized rapidly for heat and energy. The predominating carbohydrate is MALTOSE, which has the highest point of assimilation of any of the sugars, is immediately available as fuel and may be safely given in comparitively large amounts. The daily intake of protein from the employment of this formula is 15.54 grams, an amount calculated to be sufficient to replace depleted tissues and to provide for new growth. There is present in the mixture 4.32 grams of salts for replenishing inorganic elements.

The suggested modification furnishes nutrition in keeping with the character and amount of food element best adapted to the particular demands of infants in an extreme state of emaciation and serves well as a starting point in attempting to meet the nutritive requirements of these undernourished babies.

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NEWS FROM PECOS VALLEY, N. M.

DR. W. E. GOODSELL is in the hospital, quite sick, but at this writing is somewhat improved.

THE PECOS VALLEY (DISTRICT) MEDICAL ASSOCIATION will hold its annual meeting in Clovis, N. M., on October 30th.

THE CHAVES COUNTY MEDICAL SOCIETY is not getting down to business as it should after the summer vacation; some of the members seem rather slow about getting into the harness again.

ST. MARY'S HOSPITAL STAFF have about forty percent of the members absent from the regular meetings about sixty percent of the time. This should not be. If the Staff is to derive any benefit from the meetings and the discussion of cases, attendance is necessary. C. M. YATER,

THE EDDY COUNTY (N. M.) MEDICAL SOCIETY

Artesia, N. M., Sept. 25, 1924.

The Eddy County Medical Society met in regular session at Carlsbad on September 25th. Present: President Doepp, Drs. Boatman, Black, Culpepper, Parks, Pate, Puckett, Stroup and Russell. Visitors present were Dr. Rock of South Dakota, Major Russell of the U. S. P. H. S., and Dr. Miller of the U. S. Biological Survey, the last two mentioned being in Carlsbad investigating the situation with reference to the supposed epidemic of anthrax among the jackrabbits of the Lower Valley.

The program for the meeting was as follows:

"Cholera Infantum", by Dr. R. J. Boatman, Carlsbad.

"Tarantula Bites", by Dr. M. B. Culpepper, Carlsbad.

"Phimosis in Infant Males," Dr. O. E. Puckett, Hope.

"Postoperative Ileus," Dr. William F. Glasier, Carlsbad.

"The Anthrax Epidemic", Dr. Parks.

Dr. Boatman's paper dealt with the treatment of cholera infantum per se and emphasized the difference between that trouble and ordinary intestinal disturbances of the infant. The discussion was participated in by Drs. Culpepper and Doepp.

Dr. Culpepper's paper on "Tarantula Bites" was a compilation of cases he has seen, giving in detail the symptoms of which his patients complained. The discussion by Drs. Stroup, Boatman and Pate brought out the apparent rarity of this accident in this country and showed no definite parallel of symptoms indicating a constant result from tarantula bites.

Dr. Puckett talked on "Phimosis in the Infant Male", raising the question of proper procedure as to circumcision at birth. Practice varies in the work of several men who expressed themselves on this, from doing nothing at all at or near birth to circumcision of every male child. No statistics were given showing differences in results in after life.

Dr. Parks gave an outline of the procedure for vaccinating dairy cattle against anthrax, with the effects on their milk, none of which are detrimental to its use, and the attitude of the Public Health Service toward the disease.

Dr. Pate followed with a report of some cases of suspected anthrax in human beings. He gave the symptoms presented in detail and outlined his treatment. Dr. Miller followed with an explanation of his work in connection with eradication of rodents and canine carriers of anthrax, explaining the necessity of quick and thorough action, where it is demonstrated that the disease exists.

Major Anderson explained the similarities and differences in symptoms in anthrax and tularemia, holding out the possible theory that our trouble down here may be the latter disease.

Dr. Parks expressed the firm conviction that this Society should meet at least once a month and made a motion that we meet on the 22nd day of October, at Artesia, which motion carried.

Dr. Stroup, as President of the Pecos Valle Medical Society, gave an invitation to all present to attend the meeting of that body at Clovis on the 30th of October.

Meeting adjourned to meet in Artesia on October 22nd.

C. RUSSELL, Secretary.

BOOK REVIEW

A MIND THAT FOUND ITSELF. An Autobiography, by Clifford Whittingham Beers. Revised Edition, 1923. Doubleday, Page & Co., New York City.

From a letter to the author: "You have handled a difficult theme with great skill, and produced a narrative of absorbing interest to the scientist as well as layman. It reads like fiction, but it is not fiction; and this I state emphatically, knowing how prone the uninitiated are to doubt the truthfulness of descriptions of abnormal processes."—William James, Professor of Psychology at Harvard University.

The first edition of this book was published in 1908, being the result of Mr. Beers' state of mind expressed in his own words when he finally returned home after three years years spent as a mental patient in institutions: "I have decided to devote the next few years of my life to correcting abuses now in existence in every asylum in this country."

Pollen Asthma

SEASONAL asthma is usually caused by pollen sensitivity. Even in perennial asthma, pollens are frequently found to be primary or secondary causative factors. Hence, it is now recognized that in the diagnosis of asthma, pollen proteins should be used in association with food, epidermal, bacterial and other proteins. Diagnostic pollens are, however, of particular importance when testing cases where symptoms are accentuated during the pollinating seasons.

List of pollens showing regional distribution and time of vollination sent on request.

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From his vision of what might be done resulted the National Committee for Mental Hygiene, which now has 26 state societies auxiliary to it; which publishes what is probably the best journal available on the subject of mental hygiene; which has established clinics, carried on mental hygiene service, investigated institutions, and in every way promoted the improved care of the mentally ill, and educated not only the medical profession, but the public in the idea of preventing many mental diseases by prophylactic agencies.

The book itself describes vividly the patient's contacts with ignorance, social indifference, political depravity, commercialism and medical incompetence, as he suffered, opposed and damned them. His three years of mental breakdown included residence at home, in a private sanitarium, in a state institution for the insane and in a private institution to which mental cases were legally committed.

In these places he became personally acquainted not only with some employees eminently qualified for the work they were doing, but also with stupid, ignorant, brutal attendants, and unthinking medical assistants. He lived through all phases of institutional life from the padded cell and strait-jacket then in vogue, to the unsupervised parole of the convalescent.

Thanks to a retentive memory and numerous records surreptitiously written, the story is wonderfully complete.

The result is a classic of human revelation which should be read by every physician.

THE EFFECTS OF REMOVAL OF DENTAL INFECTION ON CHRONIC GASTRO-INTESTINAL DISORDERS. G. Reese Satterlee, M. D., New York. Med. Jour. and Record, May 21, 1924, p. 481.

In a recent study of 1,512 patients, it was noted that often discouragingly poor results followed abdominal operations even when the best postoperative medical care was given; that in the past three years much more satisfactory results were secured in similar patients in whom all obvious foci, oral or otherwise, were removed prior to operation; that a rapidly growing group of patients with classical symptoms of ulcer, cholecystitis, gastroenteritis and colitis have been cured by surgical removal of foci of infection, without abdominal operation.

While this paper emphasizes dental infection, it is necessary that a complete survey for all possible foci be made, particularly the tonsils and the sinuses of the head. It is necessary to have a complete x-ray study of all the teeth, and suspicious teeth which are not extracted should be watched by x-ray examinations every six months.

Absence of pain is a characteristic of streptococcus infection about the teeth, though discomfort is usually present; there is also frequently a peculiar metallic taste.

A series of seventy-two cases is tabulated showing the effects upon gastro-intestinal disorders, of attention to foci of infection especially about the teeth.

W. W. W.

ABSTRACTS

HEAD INJURIES. John F. X. Jones, M. D., and George E. Pfahler, M. D., Philadelphia, Pa. Medical Jour. and Rec., May 7, 1924, p. 442.

This is a report of fifteen cases of head injury observed at the Misericordia Hospital, during February, March and April, 1923; they comprise the following injuries: (1) extradural and subdural hemorrhage with mul-

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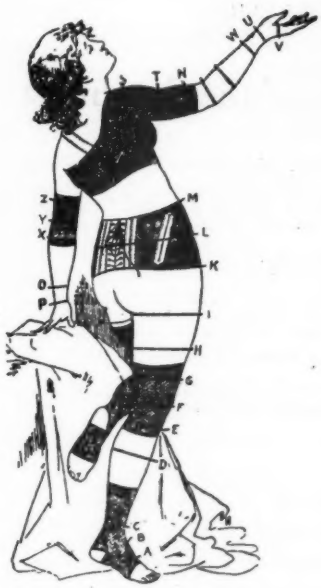

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tiple fractures; (2) basal compression; (3) extradural and subdural hemorrhage; (4) concussion; (5) linear fracture without intracranial injury; (6) laceration; (7) concussion, subdural hemorrhage and compression without fracture; (8) concussion with hemorrhage, compression probably prevented by drainage through lines of fracture or lumbar puncture; (9) compound depressed fracture; (10) fracture of vault without symptoms of intracranial injury; (11) simple fracture of vault and laceration; (12) concussion and multiple lacerations; (13) fracture of skull without symptoms of brain injury; (14) compound fracture and concussion; (15) compound fracture.

History of the accident seldom helps in making diagnosis of head injury; a fall of but a few feet or apparently insignificant violence has caused serious intracranial hemorrhage, while a fall from a great height has resulted in nothing more serious than a scalp wound. An uncomplicated fracture of the skull when the fragments are not depressed and when the line of fracture does not communicate with a wound in the scalp or mucous membrane is of little surgical importance. Fractures of the skull cause concern only in so far as they involve the contents of the cranium. Contrariwise trauma to the head may cause severe intracranial damage without fracture of the skull.

W. W. W.

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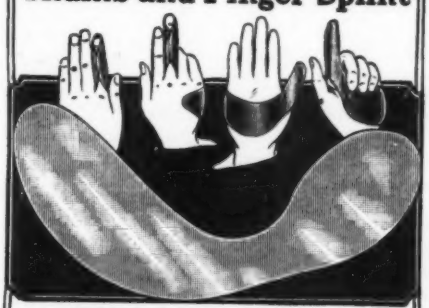

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   on the.....day of....., 19.....
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   Give name of college in full
   on the.....day of....., 1.....
3. My State Certificate was issued.....
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4. I am a member of the following Medical Societies:.....
   .....
   .....
   .....
5. I have practiced at my present location.....years, and at the following places for the years named: .....
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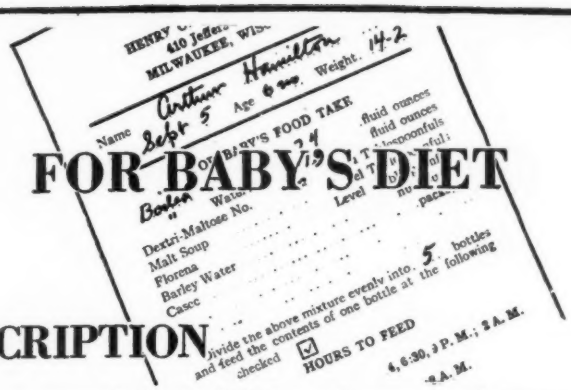

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